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A Study
IN
EUGENICS; "UNTO THE THIRD AND FOURTH GENERATION."

An Address delivered before the Canadian Medical Association, Edmonton, August, 1912,

BY J. G. ADAMI, M.A., M.D. CANTAB. AND McGILL, Sc.D., F.R.S.,
STRATHCONA PROFESSOR OF PATHOLOGY, MCGILL UNIVERSITY.

LADIES AND GENTLEMEN,—Phrases, be they prose or poetry, which became ours in childhood remain as our surest possessions. They may have had little meaning for us when first heard; they may have become part of ourselves by no conscious effort through the mere force of iteration, but all the same they are apt to appeal to us, to be a part of our consciousness in a way that expressions of later acquirement cannot nearly approach.

REMARKS ON SEXUAL HEALTH AND MORALS.

Casting round for a title for my talk to you this evening, the old phrase obtruded itself that droned out Sunday after Sunday in the little village church of my boyhood had become part of my being. I do not know that it is a happy title: it inevitably suggests a text; it is pretty sure to have suggested that I am to indulge in a moral disquisition, when I am going to do nothing of the sort. I shall, it is true, have to dwell upon matters which constitute the basis of morals—that is inevitable in any discussion upon eugenics. These are matters which the public is accustomed to contemplate from their moral aspect, from the aspect of the soul's good, whence it follows that the same pensive public labels everything connected with them as immoral and most improper. Medical men, on the other hand, weigh and discuss them from the point of view of the body's good. Thus, while admitting freely that body acts on soul, and soul on body, that the health of the one depends largely upon the health of the other, nevertheless as a medical man I must treat my subject in an *un*moral manner. Nay, more; I believe that we medical men accomplish most for the good of our fellows when we expose the cold facts bearing upon heredity and eugenics without reference or recourse to morals. The cobbler does best if he sticks to his last. Wherefore I would ask you to understand that my title means merely this, that to-night I want to discuss the effect of parental well-being upon the progeny, that I have been driven to employ this title because it reflects the almost universal confusion between sexual health and morals, and I may add, because with that confusion it pictures what until the end of the nineteenth century accurately figured the general belief—namely, that conditions affecting the parents influence the children even unto the third and fourth generation.

THE WEISMANN THEORY OF INHERITANCE.

The last two decades with the advent of Weismann have registered a change in authoritative opinion. Weismann in Germany and, before him, Francis Galton in England have through their writings convinced the world that properties acquired by the parent or parents are *not* inherited by the children. If we accept the doctrine of the continuity of the germ plasm, which I hope to make clear to you shortly (and the researches of the cytologist and embryologist show that we must accept it); if, further, we clearly recognise that that only is inherited which is or becomes the property of the individual at the moment of origin of that individual, at the moment that is, when the germinal matter of the male parent fuses with the germinal matter of the female parent and these twain become one, and that every property obtained by that individual after this event cannot be inherited but is acquired, if we accept these two fundamental ideas, it has seemed inevitable that we must assent to this newer teaching. Saying this I know perfectly well that in his later writings Weismann made an admission which largely modified his theory. He admitted that the germ cells might undergo modification while in the body of the parent. But your ordinary man is impatient of parenthetic qualifications. He grasps at broad general statements—and the public is to be pardoned if one important qualification has escaped it when, in successive publications, the Freiburg philosopher introduced so many subtle distinctions and qualifying conditions that it demands not a simple paragragh, but a course of advanced lectures accurately to state the Weismannian theory of inheritance. And so the modern popularly accepted doctrine is that acquired conditions are not inherited, and as a corollary, that the germ cells are unaffected no matter what vicissitudes are undergone by the body at large—or, if you will, by the body of the parent at large.

Do you see, ladies and gentlemen, where this doctrine leads us? The sins of the fathers, so say these latter-day prophets, do not tell upon the children. They prophesy soothly that, no matter how the parent ill-treats his body prior to conception, the progeny is unaffected. A man may have tuberculosis or syphilis, and provided he does not give the disease to the mother and so bring about infection of the fœtus in the womb or in its passage to the outer world, the child is likely to be as strong and healthy as that of a perfectly sound parent. This, in fact, is being proclaimed, and widely proclaimed at this very time: that the children of the slums and of degraded parentage, provided they are brought to Canada and given a healthy life upon the farm, develop into citizens of as good quality, citizens every whit as good as those of good parentage. Nurture is everything, and nature negligible! If the observed facts do not tally with this view, then we are told that the incidence of particular conditions in the offspring is due to diathesis; that the parent is not to blame; he succumbed to tuberculosis or alcohol in the first place because he inherited a weakened constitution from parents who had themselves succumbed; thus both father and child possess a stigma of degeneration that originated—heaven knows how or when—in the family history; that bad stocks and feeble-minded and vicious families (and we have pedigrees of such stretching back for many generations) have arisen either by chance (they call it "mutation")—just as, for example, Cain had bad blood in him—or are to be traced back through countless ages, presumably to a mingling of the blood of Cain's stock after he married that very shady personage, Lilith, of the land of Nod, with the more respectable later offspring of Adam. Or, again, we are told that the observed weakness of the child of diseased parentage is not inherent, but due to environment; the child was born healthy, but the poor food and wretched surroundings into which he was born—the home conditions in the family of the drunkard or tuberculous—have prevented a healthy bringing up.

ULTIMATE THEORY OF INHERITANCE NOT MORPHOLOGICAL.

Now, ladies and gentlemen, let me state to you that I am sufficiently old-fashioned to repudiate this new-fangled "Weismannism." I still hold on to the belief that the sins, so-called, of the parents against the body—or, at least, a very important series of such sins—do influence the progeny to its hurt. And, what is more, I believe that these new-fangled ideas have their origin in the narrowness, and, if I may so say, Chauvinistic provincialism of the zoologists. These zoologists are, if I may so express it without offence, materialists of the most limited outlook; they are capable of recognising only such changes as render themselves visible in the size and shape of parts; the more subtle changes of function, of chemical and physical activity, are outside the limits of their vision and to them are non-existent. One has only to consider for a moment to realise that underlying and determining the shape and structure of parts is the chemical composition of the same. The shape, and, indeed, the size, of any organ or part of the animal or vegetable body is the expression of the interaction between matter of a particular composition and its surroundings or environment. Our ultimate theory of inheritance must, therefore, be not morphological, determined by the shape of parts, but chemical if not physical, determined by the properties of living matter. The wonderful chemical investigations of the last few years indicate that the molecules of matter endowed with life are of such extraordinary complexity of composition that they may undergo—nay, are constantly undergoing—fine changes in composition in the performance of function, without their

general underlying structure being altered. There may be fine changes in the composition of the living molecules resulting in change of properties of first importance for the organism as a whole, without any immediate structural change showing itself in the individual. It is only when the alteration of environment has rendered these changes fixed and permanent that we can expect to find permanent morphological changes. It follows, therefore, that the first indication of altered state of the individual and its progeny tend to be ultramorphological, and that the methods of the morphologist—that is to say, of the morphological zoologist and botanist—are not fitted to unravel the problem. They do not begin at the beginning.

THE PHYSICAL BASIS OF INHERITANCE.

In order that you may grasp the problem let me put rapidly before you in graphic form the fundamental facts concerning the physical basis of inheritance. We know in the first place, as a matter of universal knowledge, that the individual, be it animal or plant, is liable to inherit properties equally from both father and mother. It may happen that in one family the progeny in the main appear to take after the mother; in another they equally are seen to have a greater resemblance to the father; in yet another, perhaps in most, some children take after the one parent, others after the other. Broadly, in the act of conception the new individual receives heritable matter from both parents. If, now, we inquire more particularly into the details of the process we find that the zygote, the fertilised cell from which the whole future individual becomes developed, the new individual in fact, has a remarkable composition. In this fertilised ovum, or zygote, the cell body, or cytoplasm, is afforded by the mother—is supplied by the ovum. The amount of cytoplasm contained in the tail of the spermatozoon is so minute as to be not deserving of consideration except in regard to the midpiece which supplies the centrosome or minute portion of cytoplasmic matter which initiates cell division; the head is composed wholly of nuclear matter. The one constituent which is afforded equally by both male and female cell is this nuclear matter. Approximately equal portions of nuclear matter are contributed by the two parents to constitute the nucleus of the single cell which gives origin in the whole new individual. Here, therefore, in this nuclear material must be conveyed all the heritable and characteristic properties of the father and mother.

Next, it has to be borne in mind that from the very beginning in that process of cell division and multiplication which ends in the production of the fully formed individual with all its distinct tissues and organs, the cells which are destined to give origin to the germ cells, male or female—to the spermatozoa and the ova—are kept apart from those giving origin to all the rest of the body. Those other cells as they multiply become more and more altered in one or other direction until some, for example, become bone cells, others nerve cells, others gland cells, and so on. But the germ cells remain simple, or, as we term it, undifferentiated, throughout. At most just prior to discharge they undergo a process of reduction whereby the chromomeres or nuclear units are halved in number, so that when the spermatozoon and ovum come together the nucleus of the zygote, formed by the junction of their two nuclei, contains the number of chromomeres, or nuclear units, proper to that particular species instead of being doubled in each successive act of fertilisation.

This it always seems to me is the central miracle of descent. Each one of us—and every living multicellular being—with all our extraordinary complexity of parts and organs, is developed from a simple undifferentiated cell—the egg—and that cell in its turn is not originated by the piecing together minute elements from all the different tissues and organs of the parent, but is a direct descendant of the undifferentiated germ cells of the parents and grandparents. The germ plasm, that is, always remains undifferentiated—the cells composing it always remain simple. This is what is meant by the continuity of the germ plasm. The germ cells give rise to the soma, and at the same time to the next generation of germ cells, while the soma gives rise to nothing but itself, and ultimately perishes. Death is inherent in the soma; the germ cells have the potentiality of carrying on the torch of life through unending generations—or, in other words, the germ plasm is potentially eternal. These germ cells divide and divide, giving origin to similar simple cells until such time as one of them becoming discharged encounters a germ cell of the other sex—and the result of the combination of the two is that marvellous complex of cells of all orders, the animal body, enclosed in which is a group of unaltered cells, the germ cells, which in their turn undergoing discharge are capable, upon fertilisation, of helping to give origin to another complex individual. Thus, to express this order of events in scientific language, the undifferentiated germ cells or blastogenic cells give origin to the soma or body, composed of blastogenic and somatogenic cells. The blastogenic cells are passed on from generation to generation in an undifferentiated condition.

PROBLEM OF TRANSMISSION OF ACQUIRED CHARACTERISTICS.

This leads us to our problem. It is obvious that if an adult individual loses, for example, an arm, that loss does not reproduce itself in each of the hundreds of ova, situated in the ovary, if the individual be a female, or the billions of spermatozoa in the testes, if the individual be a male. Acquired deformities as such are not reproduced in the progeny. Weismann, for instance, cut off the tails of 20 successive generations of rats, and the twenty-first generation had as well-developed tails as had the first. Nor again, will the shrinkage of a part in the parent, brought about by want of use, lead to small size of the same part in the offspring. The woman who takes no exercise, and whose biceps as a consequence is flabby and miserably small, does not necessarily have a child with small biceps. The accompanying poor nutrition of the mother, it is true, may tell upon the vigour and vitality of the child; it may be puny and miserable, but the whole body will be affected and not one particular part.

Thus far we wholly agree with Weismann[1] and with his statement: "By *acquired* characters I mean those which are not preformed in the germ, but which arise only through special influences affecting the body or individual parts of it. They are due to the reaction of those parts to any external influences apart from the necessary conditions for development. I have called them *somatogenic* characters because they are produced by the body or soma, and I contrast them with the *blastogenic* characters of an individual, or those which originate solely in the primary constituents of the germ (*Keimesanlagen*). It is an inevitable consequence of the theory of the germ plasm, and of its present elaboration and extension so as to include the doctrine of determinants, that somatogenic variations are not transmissible." Now this, we admit, is an inevitable consequence of the theory; but let us see whether it is an inevitable consequence of the facts. In other words, is it not possible, and have we not evidence to prove, that modifications of the soma or body which originate during the lifetime of the individual independent of any inheritance may affect the germ cells in such a way as to bring about a like modification in its body?

INFLUENCE OF CHEMICAL AND PHYSICAL AGENTS ON GERM PLASM.

Let us proceed by stages. First, do we possess evidence that the germ plasm in the germ cell is capable of modification outside the body, or is it absolutely fixed and inert until such time, it may be, as it is stirred to activity by the attraction to, and fusion with, a germ cell of the other sex? Perhaps the clearest evidence that it is susceptible to outside influences is afforded by Bardeen's experiments.[2] It is possible to fertilise frog spawn experimentally outside the body by collecting and discharging over it frog sperm, and from this fertilised spawn to obtain perfectly developed frogs. But now if the sperm be subjected for a short period to the action of X rays and then be employed for fertilisation the eggs segment and the early larval stages are passed through, but the process of development is arrested in a few days—the larvæ all die prematurely. None survive beyond the second week. Obviously the germ plasm in the spermatozoa is acutely susceptible to the action of this physical agent.

Next have we evidence that the germ plasm in the germ cells is capable of modification during the time that it exists in the body of the individual prior to ripening? To this question, again, the answer must be an unhesitating yes. Quite the most striking evidence is that afforded recently by

Tower.[3] Tower made the remarkable observation that if shortly before the maturation of the oögerm cells, ova, and sperm he subjected certain chrysomelid beetles (or popularly potato beetles) to intense environmental change—to cold and humidity—he obtained offspring widely different from the parents, and, what is more, the results appeared to be permanent or, at least, heritable through further generations. The elytra or wing cases of the normal beetle showed one pattern, those of the progeny of the cooled beetles showed another. When crossed these altered forms bred true, nor did they lose their acquired characters in subsequent generations. Similarly among plants Macdougal has shown that in the evening primrose by injecting certain chemical solutions into the immature ovaries, and so by subjecting the oöcytes or female germ cells to certain chemical agents, he obtained seeds which afforded plants some at least of which departed widely from type; he established new varieties.

In the body, therefore, the germ plasm is capable of being influenced by physical and chemical agents. This is evidence of the first importance for us as medical men. We have long observed that intoxicants affecting the body of the parent are liable also to affect the germ cells, but our morphologist *confrères*; zoological and botanical, have given as much heed to our data as did the priest and the Levite to the wounded man of the parable. They have not thought them worth even twopence. And that because our observations deal almost wholly, not with morphological variations but with functional change.

Let me indicate the data to which I refer—I have brought them forward on previous occasions and they have never been contradicted. Take Constantin Paul's figures collected in the "fifties."[5] Of 32 pregnancies in which the husband alone was exposed to lead in the course of his work there resulted 12 abortions, and of the 20 children born alive 8 did not survive the first year, 4 died during the second year, 5 during the third. The 32 pregnancies yielded only three children living beyond the third year. What can this mean other than that the lead had influenced the germ cells of the fathers? Nor is this all; Paul, Roque, Sir Thomas Oliver, and other investigators have called attention to the great frequency of epilepsy, idiocy, and imbecility in the children of workers in lead, and it is well established that such feeblemindedness, where not of sufficiently high grade to cause barrenness, is passed down to later generations. We have identical data regarding workers exposed to the fumes of nitrate of mercury (Lizé[6]).

—	Number of cases.	Number of pregnancies.	Abortions, premature labour, and stillbirths.	Surviving infants.	Remarks.
Mother alone exposed	3	7	4	3	—
Father and mother exposed	2	14	5	9	Of these, only 3 survived fifth year.
Father alone exposed	?	12	4	8	Of these, 3 died before fourth year. One alone vigorous.

EFFECT OF PARENTAL ALCOHOLISM ON OFFSPRING.

These, it may be said, are rare conditions. How about the commonest of all intoxications, the alcoholic? You will know, perhaps, that there is waging at the present time an active discussion upon this subject; that Karl Pearson,[7] for instance, the notable statistician and Galtonian professor of eugenics in the University of London, has compiled some remarkable statistics to show that the children of alcoholics in Edinburgh are, if anything, superior in capacity to those of abstainers. Auld Reekie we admit is a great city, and its inhabitants are popularly said to consume much alcohol, but this has been a little too much to swallow, and so Sir Victor Horsley[8] has followed upon Professor Pearson's tracks, has seized upon his figures, and rent them in a manner fearful and wonderful to behold.

The subject is so complicated that it is difficult to arrive at clear comprehension of the case. The home misery and poverty, for example, brought about by alcoholism place the offspring at a disadvantage from the very onset. If the mother be an alcoholic, then the child nourished by the maternal blood is liable to malnutrition and to slow intoxication while growing in the womb. When, however, we come to compare the family statistics for confirmed alcoholics and for the ordinary temperate population, there can be no doubt but that alcohol is responsible for an appalling amount of early death. The vitality of the offspring is gravely affected, and, for myself, from families of alcoholics observed by me, I cannot but feel that the children of confirmed drunkards show an increased susceptibility to the action of relatively small amounts of alcohol. It is, however, by experiment in which we can cut out all complicating factors that we gain clear proof of the deleterious action of alcohol upon the germ cells, and so upon the next generation. Only recently Stockard has published some most conclusive observations. Employing guinea-pigs, he placed them in a state of chronic alcoholism by treating them for six days per week with alcohol fumes almost to the point of intoxication; 40 full-term matings of various combinations were made with these animals. Treated males were paired with normal females, treated females with normal males, treated males with treated females. Altogether 25 out of the 40 matings either gave no result or the embryos aborted early and were eaten by the mother; 15 matings produced in all 25 young (in place of about 70), of which at the time of writing 2 had reached maturity; 4 were young but seemed normal. Of the remaining 19, 8 were stillborn or aborted, 7 lived for a few days after birth and then died in convulsions, 4 were in utero when the mothers were killed, and of these one was deformed. Professor Stockard has been so good as to write to me the exact details of what is the crucial test of this action of alcohol upon the germ cells—namely, of the pairing of treated males with normal females—crucial because in the opposed pairing of treated female with normal male it may be objected that the ill effects are due to the disturbances induced by the maternal blood while the offspring are in utero, are acquired and not inherited.

The following are the results of 24 matings of alcoholised father with normal mother (guinea-pigs). 14 matings gave early abortions or were negative. 5 matings gave stillborn litters (in all 8 young). 5 matings gave living litters (in all 12 young). Of the 12 living young 7 died in convulsions soon after birth and 5 survived. 24 matings yielded 5 surviving young. When 2 months old these 5 survivors were half the usual size. The average litter of the healthy guinea-pigs is between 4 and 5. Therefore, under the influence of alcohol 24 matings only produced as many surviving young as might be expected from a single pairing of two healthy animals.

There could be no clearer, more positive evidence afforded of the effects of alcohol upon the next generation, and we have analogous data from human families which can only be interpreted in the same sense; such, for example, is this pedigree afforded by Mott.

Example of Drunken Father and Insane Offspring.

Father. Born 1830. No family history of insanity, fits, or nervous disease. Chronic drunkard from boyhood. In asylum 12/6/76 to 11/7/76; and 19/1/92 to 3/2/92.

Mother. No history of insanity in family.

Daughter. Born 1859. Admitted to asylum 24/10/74. Discharged and readmitted on subsequent occasions. Still in asylum.	*Daughter.* Born 1860. Admitted to asylum 6/10/74. Discharged and readmitted on subsequent occasions. Still in asylum.	*Son.* Born 1862. Admitted to asylum 29/6/77. Discharged and readmitted and discharged on two subsequent occasions.	*Daughter.* Born 1869. Admitted to asylum 2/1/92. Discharged and readmitted. Still in asylum.	*Son.* Born 1872. Admitted to asylum 24/11/88. Died from tuberculosis 4/9/02.	*Son. Daughter. Daughter.* Not been in asylum.

INFLUENCE OF OTHER POISONS.

Now let us pass to the consideration of another group of poisons. Nowadays I take it every schoolboy knows that the bacteria and other microbes of infectious disease produce their effects by the chemical substances which they liberate into the blood during their growth in the body or, when they die, in the tissues. The infections, therefore, are one form of intoxication. Do the bacterial poisons circulating thus in the blood influence the germ cells? Here again the general sense of the medical profession, the accumulated result of individual observations, has long been to the effect that they surely do. Time and again the practitioner has observed a relationship between chronic or acute infection suffered by either parent and abortion, blighted ovum, stillbirth, or even monstrosity. And here more exact observations of investigators like Gheorghiu come to our support. Gheorghiu[10] made an extended inquiry into the health conditions of the parents in a long series of monstrous births occurring in the Paris hospitals, and his statistics show most convincingly that there is a direct relationship between parental tuberculosis, syphilis, and acute infections affecting one or other parent and these gross examples of maldevelopment. Time and again also the ordinary practitioner has been convinced that the children of those suffering from tuberculosis and syphilis are not merely of lowered vitality, more liable to succumb to childish ailments, but, notably in the case of tuberculosis, exhibit a peculiar liability to succumb to the same parental disease—exhibit, in short, a diathesis.

But here, again, conditions are so complicated that it is difficult to secure a series of absolutely decisive cases. Not only have we to weigh carefully the possible influence of the disturbing factors noted in connexion with alcoholic intoxication—influence of maternal malnutrition upon the growing embryo, of bad nutrition and environment during childhood, and so on—but in addition there has to be discounted the possible direct acquirement of the infection by the fœtus from the mother during pregnancy, or during parturition, or again, by the suckling infant. For a sure answer we have once more to appeal to experiment—and experiment once more gives an affirmative answer. Carrière, for example, inoculated a series of guinea-pigs, both male and female, with the toxins and soluble products of the tubercle bacillus.[11] Here are his results:—

	Stillborn.		Dying before 10th day.		Surviving.		Total births.
	No.	Per cent.	No.	Per cent.	No.	Per cent.	
Male and female both inoculated	13	52·0	7	28·0	5	20·0	25
Female alone inoculated	7	26·9	9	34·6	10	38·4	26
Male alone inoculated	5	16·6	3	10·0	22	73·3	30

You will see from this table that the circulating toxins have had a very definite effect in reducing the numbers of the litters and increasing the numbers of stillborn progeny.

Similar results have been obtained by Lustig,[12] working with chickens, and Watson,[13] working under Mott in London, employing guinea-pigs, when they made successive inoculations of a very toxic vegetable extract, abrin, which in its properties closely resembles the bacterial toxins. Both obtained diminished fertility, increased number of monstrous births, poor vitality; and both, like Carrière in the case of tuberculin, note particularly that the offspring of the animals subjected to these toxins, instead of being rendered more resistant to the particular vegetable poison, were, on the contrary, distinctly more susceptible. This is wholly on a par with the common observation of medical men that the children of those suffering from advancing tuberculosis are more liable to succumb to tuberculosis than are those of healthy individuals.

EVIL EFFECTS OF VARIOUS AGENTS ON GERM PLASM.

Let me now for a moment gather up the threads of my argument. I have proved to you that the essential germ plasm which conveys the heritable characters from generation to generation is not inert and incapable of being influenced, but, on the contrary, is susceptible to physical and chemical agents affecting the body and circulating in the blood; that intoxicants and the poisons of infectious disease have a deleterious effect upon the offspring, that they are apt to cause relative infertility, still-births, monstrosities and imperfect developments, lowered vitality with tendency to death during infancy, instability and imperfect development of the nervous system showing itself in convulsions, epilepsy, imbecility, and insanity; as also that with some intoxications the offspring are rendered more susceptible to the action of the particular agent which had poisoned one or other parent. It is rather a ghastly record. The only comfort to be extracted is this, that if there are agents which thus act deleteriously upon the germ cells while in the bodies of the parents, it is equally certain that there must be other agencies capable in favourable conditions of benefiting the germ plasm and improving its qualities. Favourable environment thus leads to improvement of the race and progressive evolution.

SOMATOGENIC INHERITANCE.

I have still, it will be seen, to take up the question as to whether, not these introduced poisons, but influences primarily affecting the body, can secondarily have their effects upon the germ cells—in other words, whether there are any orders of conditions acquired by the body of the individual—somatogenic changes—that can affect the germ cells and so affect the offspring, producing the same order of change as had been brought about in the parent. Not to beat about the bush, let me recount to you two recent observations—one from the animal, one from the vegetable world.

Sumner[14] has shown that if similar broods of young mice be brought up, the one in a warm temperature (about 21° C.), the other in the cold (about 5° C.), they show recognisable differences in growth. The mean (average) length of tail, of feet, and of ears of those brought up in the warmth is distinctly greater than of those kept in the cold. And here is the important fact: the young of the two groups, although reared together in a common room, all, that is, subjected to the same temperature, continue to present the greater or lesser growth of tail, foot, and ear acquired by their parents. Bordage's observation is of the same order.[15] Ordinary peach trees planted in the warm climate of the Island of Réunion from being deciduous gradually acquire an almost evergreen habit; and now if seedlings from these trees be grown elsewhere in a cooler climate these seedlings manifest the same tendency to be evergreen and not deciduous.

Of course, it may be urged—it has been urged—that in both these cases the germ cells were subjected to the same temperature changes as were the bodies of the parent individuals, that these are not therefore necessarily examples of inheritance of properties of *somatogenic* acquirement. Quite so. But certainly in the first place, for our purposes whether they are instances of the somatogenic or blastogenic inheritance of acquirements is of minor importance, and in the second place they afford further proof of the susceptibility of the germ cells to modification in their properties. For us as students of medicine the point of especial interest is that the work of the last decade has developed greatly our knowledge of what we term the internal secretions. We find that many of the glands of the body such as the thyroid, the adrenals, the pituitary, the ovaries and testes, not to mention the liver and the mucous membrane of the intestine, in their normal activity discharge into the blood substances which carried to other organs, not merely influence their work, but are absolutely essential to the proper carrying out of their function. We recognise, in fact, a series of diseases due to the excess or the defect of these internal secretions—conditions such as exophthalmic goitre, myxœdema, Addison's disease, acromegaly, and so on—while other so-called metabolic disturbances, such as adiposity, gouty states, &c., are being increasingly recognised as closely allied. If the cells of particular organs are highly susceptible to these "hormones" and other active principles of the secretions of other organs, surely is it not likely that the parent germ plasm, the cell matter which by its active growth is capable of giving origin to all these organs and tissues, should likewise be susceptible to their action, and influenced by their excess or deficiency? Nay, should we not expect that bodies of this nature developed by the cells in their activity should act with greater ease upon the living substance of the germ cells

than extraneous drugs are likely to act? As a matter of fact, alterations in such glands as the thyroid, the pituitary, the adrenal cortex, the pineal are found to have a profound influence upon the sexual function. In certain cases this is arrested, in others stimulated to premature activity. I will only say here that evidence is accumulating to prove that influences acting upon these organs of internal secretion, conditions acquired by these organs, tell upon the germ cells, and are apt so to modify them that the offspring in their development show excess of deficiency in the function of the glands implicated in the parents, that so conditions acquired by the parents reproduce themselves in, and become inherited by, the offspring. I will not say that this is wholly proved—it is not; but I would lay down that it is along these lines that the direct inheritance of morbid states will most surely be demonstrated.

CONGENITAL DISEASE.

But this *inheritance* of disease is far from being everything. There is from the point of view of eugenics another equally important section of my subject. I have only so far discussed true inheritance, conditions in which disturbances impressed upon the germ cells before fertilisation affect the offspring. I must at least glance at the serious effects of congenital disease, and more particularly of infections conveyed to the growing individual while in the womb or during parturition. With a fuller realisation of the frequency of these congenital diseases, of the havoc these are playing upon individual lives, the misery, ill-health, and ruin that they inflict, with the surer recognition of the presence and after-effects of what euphemistically we speak of as the contagious diseases, brought about by more exact methods of diagnosis, such as the Wassermann reaction and the actual recognition under the microscope of the gonococcus and the spirochæta pallida, we have during the last decade more especially come to a realisation of the hideous frequency of these diseases and their ill-effects upon the innocent of the second generation. When it is accepted that at least half of gynæcological practice is due to gonorrhœa and its results; that a large proportion of the cases of infantile blindness is of gonorrhœal origin; that, as demonstrated by the Wassermann test, practically all cases of locomotor ataxy and nearly all cases of general paralysis of the insane are of syphilitic origin; when we know that most cases of multiple successive abortions are syphilitic, and recognise the puny, miserable parodies of humanity doomed in most instances to an early death, that too often are the result of syphilitic disease in the parent; when we realise the preventable ills that follow in the train of these venereal diseases—I wholly agree that the time has come when we should no longer refer to these matters by circumlocution, when for the good of the coming generations we should openly wage war against gonorrhœa and syphilis, and, above all, should for the safety and welfare of our children instruct them as to the dangers they must ward against, not merely on account of their own health and happiness, but for the sake of the generations yet unborn.

PREVENTIVE MEASURES AGAINST SYPHILIS IN AUSTRALIA.

At the Dominion Day dinner in London the other day, after listening to Mr. Foster's magnificent oration, the Agent-General for Australia, strong at heart in the knowledge of what the Commonwealth was accomplishing in the matter of Imperial defence, said drily that if it depended only upon Canadian talk then surely the safety of the Empire was assured; there would be *Dreadnoughts* to spare. We have to confess humbly that in more than one matter while we are talking Australia has been doing. Melbourne has led the world in a census upon the extent of syphilitic infection in her midst. At the meeting of the Australian Medical Congress two years ago a resolution was passed to the effect that syphilis is responsible for an enormous amount of damage to mankind, and that all preventive and remedial measures against it are worthy of the utmost consideration. This resolution was presented to the Government of Victoria accompanied by the statement that there was a sharp difference of medical opinions respecting the extent and distribution of the disease. Acting under the advice of its chief health officer, Dr. Ham, the Government sanctioned a collective investigation with the aid of the medical profession in Melbourne. The Government thereupon appointed an expert, Dr. Conrad Hiller, to make the official tests; syphilis was made a compulsory but impersonal notifiable disease for a period of 12 months within the Melbourne area; medical men were instructed to report cases and send a specimen of the blood to be examined by Dr. Hiller. Certain suspicious conditions, like thoracic aneurysm, multiple abortion, death of three children in a family under 5 years of age, were also to be notified. In all 5500 cases were reported during the 12 months. For four months at the end of the period all the cases visiting two of the hospital clinics (eye, ear, nose, and throat cases) were tested. The results showed that out of a hospital population of 550, at least 13 per cent. were syphilitic. The hospital population was superior to most hospital populations, the majority presenting themselves for minor ailments having nothing to do with syphilis. What is more, Dr. Barrett, who studied the eye cases, lays down as the result of this routine testing that it was striking how the syphilitic taint was responsible for bad after-results in operation upon the eye, for lowered vitality, and liability to secondary infection. If a cataract or other operation failed to heal but became infected, he almost constantly found that the patient gave a positive Wassermann test or a history of previous syphilis.

PROPOSAL TO COMBAT VENEREAL DISEASE IN CANADA.

13 per cent.—one in every eight persons. Have we any right to suppose that Edmonton, Calgary, Vancouver, Winnipeg, Toronto, or Montreal are in this respect any better than Melbourne? Perhaps Toronto, though I have my doubts. Surely with the knowledge that we now possess—if only with the knowledge that we as a profession possess of the means of remedy—the time has come for us to unite in eradicating from our midst a scourge which brings in its train such hideous after-effects.

In support of my plea let me say that New York is already dealing with the matter. Upon May 1st of this year the Board of Health of the city—a body which has led the municipal anti-tuberculosis compaign on this continent—put into effect a well-thought-out scheme along similar lines, whereby the officers in charge of all public institutions, of hospitals and corrective institutions, are required to report promptly all cases of venereal diseases, and all physicians are requested to afford like information regarding private patients under their care, excepting that the name and address of the patient need not be reported. All information so obtained is to be treated as absolutely confidential and not to be accessible to the public. The Department of Public Health is prepared to make free bacteriological examination and diagnosis of material submitted when the data required for registration are furnished, and provides and distributes circulars of information in relation to these diseases.

CONCLUDING REMARKS.

It may be objected, ladies and gentlemen, that all this is not a matter for dinner and after-dinner conversation—that like your fashionable preacher I should have chosen for this popular address something so choice that it would offend the susceptibilities of none of my hearers and, let me add, have done no good to anybody. But I say that when a false scientific theory has been disseminated, and is being popularised and applied wrongly to the hurt of the future generations, it is the physician's right—nay, it is his duty—to call a halt and expose the truth. When it is being taught that parents may subject themselves to intoxications and infections, and that their offspring in their bodies and in their health pay no penalty—that the race does not directly suffer from the follies of individuals—that it is perfectly sound policy for this young country to welcome as citizens those of degraded or depraved parentage, then I hold that it is the duty of the physician to tell the truth as he knows it, and to explain in clear unveiled language the basis of his belief. I have brought forward these matters to-night not on moral grounds, not for the soul's salvation of any here present—though I would say let him that readeth understand and apply what I have said—but because with all who have the interest of this great country at heart I want it to be realised that clean living makes the great nation; that if the parents eat a sour grape the children's teeth, aye, and much more than their teeth, are liable to be set on edge; that evil living must tell upon the race even unto the third and fourth generation.

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A Clinical Address
ON
THE IMPORTANCE OF EXAMINING THE URINE BACTERIOLOGICALLY.

Delivered at the Opening Meeting of the Derby Medical Society on Oct. 15th, 1912,

BY W. HALE WHITE, M.D. LOND. & DUB., F.R.C.P. LOND.,
SENIOR PHYSICIAN TO GUY'S HOSPITAL.

GENTLEMEN,—When your President did me the honour of asking me to give the opening address of your session, I was much perplexed as to the choice of a subject, but finally chose that which he has announced to you, for although it has long been known that micro-organisms may be found in the urine, the clinical importance of their presence has only been recently recognised. I have known bacillus coli, streptococci, gonococci, staphylococci, pneumococci, proteus, Gaertner's bacilli, tubercle bacilli, and typhoid bacilli to be present in the urine, and other micro-organisms have been found there. Of these bacillus coli is far the commonest.

How do the Micro-organisms Reach the Urinary Tract?

There has been much questioning as to how these micro-organisms reach the urine, and most of the discussion has concerned the route by which the bacillus coli has got there. It is much commoner to find it in the urine of females than males, whether we consider children or adults, and hence the view that it passes across the perineum to the vulva, so by the urethra to the bladder, and thence to the kidney. But this is not an entirely satisfactory explanation, for bacillus coli is generally believed to be especially common in the urine of pregnant women, but it is hard to see why the vulva should be more frequently infected in them than in those who are not pregnant. Then a urethritis due to coli infection is not known to be common, and although often cystitis precedes pyelitis as we should expect if the micro-organism travelled by the vulva, yet certainly in some cases the kidney is affected by bacillus coli without any cystitis, and although some babies get a coli infection of their urine, one would have thought that, if coli organisms from the anus passed direct to the urethra, cystitis would be almost universal in female babies for whom napkins are used. Still, when we remember the great excess of female over male cases in both adults and children, we must, I think, admit that direct transmission from the anus probably plays an important part in the infection of the urine with bacillus coli. It is true that many diseases—e.g., exophthalmic goitre—are, for no known cause, commoner in one sex than the other, but such diseases are not usually due to micro-organisms.

It has been suggested that the bacillus coli passes directly from the intestine in contact with the kidney to the renal pelvis, and it has been urged that if this is so we should expect to find coliform organisms more frequently in the urine of women than men—which we do—because women are more constipated than men. But against this is the consideration that if constipation were a common cause of coli infection of the urine, this should be more frequent in women than it is, for constipation is very usual in women. Mr. W. E. Wallis, working in the bacteriological laboratory at Guy's Hospital, examined the urine of many constipated women, and failed to find bacillus coli in that of any of them; but, on the other hand, Dr. Ethel Williams[1] has examined a number of cases, and comes to the conclusion that colon bacilluria is found in the late stage of chronic disorder of the intestine, and that it is by traversing diseased intestinal walls that the organism usually gains access to the urinary tract. Clearly the frequency of infection of the urine with bacillus coli is a matter which requires additional investigation on a large scale. Further, if constipation is a cause it is not the sole cause, for bacillus coli is found far oftener in the urine of female than of male children, but little girls are not particularly more constipated than little boys.

Lastly, there is the possibility that the micro-organisms are conveyed to the kidney by the blood stream. In both rabbits and dogs streptococci and bacillus coli have been injected into the blood after the ureters have been ligatured, pyelitis has followed, and the organism injected has been found in the pus in the pelvis of the kidney. In some cases in man streptococci have been found in the urine, and they must almost certainly have come from the blood stream; and in a case of pyorrhœa under my care staphylococcus aureus was found in the pus from the gums and also in the urine, and in another, to be related presently, staphylococcus aureus was found in the pus from a boil, in the blood and in the urine. But if bacillus coli reaches the urine in this way it cannot often be abundant in the blood, for Dr. H. Williamson[2] says that in eight cases of coli pyelonephritis of pregnancy the blood was sterile. I am afraid we must conclude that although there are several suggested explanations for the presence of micro-organisms in the urine, yet none are proved, and it may be that the explanation is not the same in all cases.

Pyelitis of Pregnancy.

It is well known that pyelitis and pyelonephritis due to the bacillus coli are more common on the right side than the left, and the following explanation has been given for the cases that occur in pregnancy. It is pointed out that pressure on the ureters is common during pregnancy, for they and the pelvis of the kidneys are frequently dilated then, and if the dilatation is unilateral, it is right-sided in over 80 per cent. of the cases. The compression of the ureter is clearly due to jamming of it against the pelvic brim, for dilatation is only found in the part above the brim, and the structure which jams it is the uterus, for this organ rotates during pregnancy so that the right border presses on the back part of the pelvic brim just where the right ureter lies, while the left border looks forward. Further, this pressure is exercised most at the fifth and sixth months; before that the uterus has not risen high enough to exert pressure, and after that date it has risen so far out of the pelvis as to exert less pressure on the brim. These considerations at first sight appear to explain why in the pyelitis of pregnancy the trouble is nearly always on the right side, and is usually at its worst during the fifth and sixth months; but at best the explanation is far from complete, for it does not tell us how the micro-organisms arrive at the renal pelvis, nor why pyelitis associated with coliform organisms is usually right-sided in children, nor why coli infection of the urine is common in women who are not pregnant—for, putting aside cases during pregnancy, I see more cases in women than in men, and even in these it is commoner on the right side than the left—nor, as Dr. Williamson says, why the liability to pyelonephritis is not increased in cases of contracted pelvis or of pregnancy complicated by uterine fibromyomata.

I have mentioned these points briefly to show how much more we must learn before we discover why micro-organisms appear in the urine. Indeed, our knowledge is so unsatisfactory that all we can be said to know for certain is that if the bacillus coli leads to a pyelitis this is nearly always unilateral; if so, is almost always right-sided, and it is much commoner in females than males at all ages. Although many of the sufferers are pregnant, many are not, and it would be valuable to have a large number of figures to show if, and to what extent, the disease is more common in women who are pregnant. At any rate, pregnancy can only be a contributing cause, just as, if it is true that operations on the rectum are rather liable to be followed by coli infection of the urinary tract, they can only be a contributing cause.

[1] THE LANCET, August 24th, 1912, p. 511.
[2] Herringham: Kidney Diseases, p. 279. London, 1912.

CLINICAL IMPORTANCE OF MICRO-ORGANISMS IN URINE.

Our knowledge as to how micro-organisms get into the urine being so unsatisfactory, our present interest in the subject is almost entirely clinical. Clearly the first point to be established was whether micro-organisms are to be found in the urine removed with all aseptic precautions from patients in whom there is no reason whatever to suspect their existence there. For if they were found in those in whom they could not be associated with any illness, their value as a help to diagnosis and treatment is obviously small. As sometimes the only apparent result of their presence is a trace of albumin, as bacillus coli is said to appear occasionally in the urine in pregnant women even when there is no cause to suspect its presence, and as even some time after a cystitis or pyelitis due to bacillus coli has completely subsided, the micro-organism may be found in the urine for a long while, I was prepared to find that they might be found in the urine of some persons without anything—not even albuminuria—to indicate their presence; but as far as I have been able to learn from observations conducted on 56 adults, micro-organisms are not present in the urine collected aseptically unless there are some symptoms which may be attributed either to their local presence in the urinary tract or to their causing a general infection. Some of my house physicians kindly collected the urine aseptically with a catheter from 20 women (women were chosen because micro-organisms are more common in their urine than in that of men) suffering from various diseases—e.g., heart disease, tubercular glands in the neck, acute rheumatism—in each of whom there was no reason to suspect that the urine was in any way abnormal. In each case it was examined by bacteriologists, and they found that the urine from each of the 20 women was sterile. One of my house physicians, Mr. Wallis, examined the urine from 36 men and women, each having nothing the matter with them which would throw suspicion on the urine. In 20 it was absolutely sterile, and in the remaining 16 the micro-organism was non-pathogenic and had clearly got into the urine by contamination of the sterilised catheter by the vulva, urethra or prepuce, or from the air. Thus two males, each with a filthy prepuce, showed staphylococcus albus, and that only; and this non-pathogenic micro-organism, which is an inhabitant of the anterior portion of the normal urethra, was the only micro-organism present in most of these 16 cases. It is important to note that Mr. Wallis particularly chose many severely constipated women, but in none of them was the bacillus coli or any pathogenic micro-organism found. One woman had previously had an ileo-sigmoidostomy performed, and another had had gastro-jejunostomy done for gastric ulcer.

CONDITIONS ILLUSTRATING THE VALUE OF BACTERIOLOGICAL EXAMINATION OF URINE.

From this, then, we may conclude that the presence of micro-organisms in the urine is of clinical importance, and we will now consider the conditions in which, as far as my own experience goes, it is of importance. They fall into two groups—those in which there is nothing to direct attention to the urinary tract and those in which there is. In other words, the bacteriological examination of the urine may be of value in two ways: either it may show us the micro-organism which is causing a general infection and which we are able to detect because the micro-organism is being excreted in the urine, or it may tell us what micro-organism is causing local disease of the urinary tract.

CHRONIC ARTHRITIS.

When I began to take special interest in the bacteriological examination of the urine I was hopeful that the cause of various illnesses, which we unfortunately often meet and which we feel sure must be due to some general microbic infection, but of which we fail to find the cause, might be cleared up by examining the urine bacteriologically, but on the whole I have been disappointed. The urine has been frequently examined in cases of rheumatoid arthritis. Usually it has been sterile, but still it is always worth while to make a cultivation from the urine, as the following cases show. A woman, aged about 35, had the usual spindle-shaped swellings of the fingers and chronic inflammation of many joints so characteristic of this disease; she had been to Aix-les-Bains, had wintered in Egypt, but was getting worse and was still liable to acute exacerbations. Bacillus coli was found in the urine. She had autogenous vaccines extending over two years, and certainly seemed better for them. Here is another case: a woman, aged 50, came with subacute arthritis of the terminal finger-joints and of many other joints. There was some pyorrhœa of the gums but not much, so the urine was examined as well as swabbings from the gums; the urine showed a pure culture of the pneumococcus, and the swabbings from the gums gave an almost pure culture of the same micro-organism. With a little less to direct attention to the gums the urine would have been our only means of detecting the infection. This case is of interest in connexion with that already mentioned in which staphylococcus aureus was found in the purulent discharge from the gums and also in the urine. I saw an elderly man with osteo-arthritis of one hip, and his urine contained bacillus coli. During the two years 1910 and 1911 there were three cases of obscure arthritis in the hospital, in each of which we got a strong hint as to the cause of the arthritis by examining the urine; in two bacillus coli was found, and in the third staphylococcus aureus. It goes without saying that the finding of a micro-organism in the urine is not proof that the arthritis is due to the same micro-organism; the probability that it is would be greatly increased if I were able to bring forward some cases in which the fluid in the joint contained the same micro-organism as the urine, but considering how difficult it often is to find the cause of arthritis, especially when multiple, even a clue is of help, and I think it would be wise always to examine the urine in obscure cases. If a micro-organism is found in it the patient may be treated with an autogenous vaccine, but if under such treatment the recovery is very slow, we must not conclude that the cause of the arthritis is the urinary micro-organism, for many examples of rheumatoid and other varieties of chronic arthritis will improve slowly without a vaccine. But if improvement is rapid it seems fair to assume that the urinary micro-organism is the cause of the arthritis, and anyhow it is worth while to treat the urinary condition with urotropine and acid sodium phosphate and a vaccine, for if the urine contains a micro-organism the patient is always liable to severe cystitis and pyelitis, which will considerably add to her troubles, and if the micro-organism in the urine is the cause of the arthritis the vaccine may do it good.

GENERAL STAPHYLOCOCCUS INFECTION.

In other diseases than arthritis the examination of the urine may be of help. For example, a young man was admitted into the hospital under me. He had been taken suddenly ill a few days before with rigors. On admission he was obviously very ill, his temperature was considerably raised, he had pains all over his body, there was pain in the right hip, and swelling and tenderness over both humeri, but no evidence of any formation of pus anywhere. There were two small unimportant looking little boils on the inner side of one thigh; they looked as though they might have originated in inflamed hair follicles. The pus from them was found to contain staphylococcus aureus; no growth could be obtained from blood taken at the same time; the urine contained neither pus, blood, nor albumin, but a cultivation from it showed staphylococcus aureus. Therefore, by examining the urine we found that the cause of the patient's illness was a general infection by staphylococcus aureus, and we were able at once to begin treatment with an autogenous vaccine. Beginning early with vaccine treatment may have contributed to save his life, for he had a severe illness of many weeks' duration, and his temperature remained raised for over a month, and several abscesses appeared in various parts of the body. He got perfectly well. The boils were so trivial that the detection of staphylococcus aureus in the pus from them would by no means have proved that this micro-organism was the cause of the general infection, but its detection in the urine showed that this was so. A week after the urine was examined another examination of the blood was made; a few of the same micro-organisms were found in it, but the bacteriological report especially says they were detected with difficulty because they were so few.

STREPTOCOCCAL INFECTION.

Although in the following case there were symptoms indicating that something was wrong with the urinary apparatus, I introduce it here as it shows admirably the

importance of examining the urine bacteriologically. A boy, aged 16, was admitted under me. He said that one day five weeks ago he had several rigors and a headache, the next day he had another rigor, and during the next two weeks several more, and all the while severe headache. For the next fortnight he was fairly well, having neither rigors nor headache; then two days before admission he had diarrhœa and another rigor; the day before admission and on the day he was admitted he had several. On admission his temperature was 107° F., and he had passed no urine for 36 hours. Nothing wrong could be found out by a thorough examination. At first he said he had no pain anywhere, but on close questioning he said there was a slight pain at the end of the penis. We wondered whether he had a calculus in one ureter, the other kidney, perhaps, being destroyed by previous disease, but X rays gave no support to this view. Soon after admission he passed a little urine; it contained neither albumin, blood, nor casts. The bacteriological report upon it, however, told us that it was to all intents and purposes a pure cultivation of streptococci. He was treated with antistreptococcic serum. He got perfectly well, and when he was discharged the urine contained no streptococci. We were quite unable to discover how the streptococcal infection occurred, but we may certainly say that examining the urine bacteriologically revealed to us the micro-organism which was the cause of the illness. It is interesting to see that the presence of the streptococci in the urine led to suppression.

Bacillus Coli Infection simulating Appendicitis.

The following case is of great interest as showing that a patient suffering from coli infection of the urine may be thought to have appendicitis. A woman, aged 28, who had been previously quite well, complained of pain and tenderness on the right side of the abdomen. She was seen by a medical man, who found that she had a raised temperature, and sent her into the hospital with a diagnosis of appendicitis. On admission, my house physician, Mr. N. Mutch, found a trace of albumin in the urine, and considered the diagnosis lay between appendicitis and coli infection of the right urinary tract. When I saw the patient I, like Mr. Mutch, was in favour of the second view, for although there was a distinct point of great tenderness it was higher up and further out than is usual in appendicitis, the patient did not seem as ill as she probably would have been with an attack of appendicitis which raised her temperature to 103° and her pulse to 120; she was better than on admission; she still had a trace of albumin and slight frequency of micturition. The day after I saw her she was worse; her temperature had risen again to 103°, the point it was on admission, and on this day we received the report from the bacteriological laboratory and learnt that the urine contained bacillus coli. I was still in favour of the view that the illness was due to this, but as some thought she had appendicitis, and as, if she had, she certainly ought without delay to be operated on, I asked Mr. F. J. Steward to see her, and he agreed with me. The appendix was removed; it was perfectly healthy both to the naked eye and on microscopical section. The wound healed by primary union. The patient was treated with urotropine, acid sodium phosphate, and an autogenous vaccine. The temperature gradually fell; 11 days after admission it was normal all day. She went home after she had been in the hospital five weeks; the urine still contained a trace of albumin, and bacillus coli communis was cultivated from a specimen taken four days before her discharge.

It might be thought that as the colon bacillus is the commonest one to find in the urine, examination of this fluid would be of great help in obscure intestinal diseases, but, as far as my experience goes, this is not so. Especially I had great hopes that examining the urine would lead to the discovery of the offending micro-organism in cases of ulcerative and other varieties of colitis, but in this I have been disappointed.

Case resembling Phthisis.

The following case well illustrates the importance of examining the urine for micro-organisms. A young woman became ill, had for weeks some rise of temperature, and sweated at night. It was decided that there were signs in the lungs suspicious of phthisis, so she wintered abroad. For the whole of the winter there was no cough of any importance, and the little expectoration that could be obtained, although repeatedly examined, never contained any tubercle bacilli. During all these months no definite signs of phthisis appeared, and there was nothing to lead to the examination of the urine for bacteria; but at midsummer the practitioner who was then attending her had this done, and the fluid was found to be swarming with bacillus coli. When I saw the patient I found a temperature chart which extended over nine months, but there was no evidence of phthisis, and but little doubt that the coli infection was the cause of all her trouble. It is probably true that when bacillus coli is present in the urine of adults there is always some abnormality in it, but this may be very slight; for example, a fishy smell, a minute trace of albumin, a few pus cells, or a turbidity; and certainly the patient's illness, as in the two cases last quoted, may be so severe that it can hardly be ascribed to the very slight pyelitis or cystitis which accompanies it, but rather we must regard the presence of the bacillus coli in the urine as a means of enabling us to know what micro-organism is causing the general infection, just as in the examples described a few minutes ago the discovery of streptococci and staphylococci in the urine showed us the offending micro-organism, although the urine contained neither pus nor albumin.

As I have already indicated, we examine the urine bacteriologically, either to try to discover the cause of general infection in the hope that the micro-organism we seek may be passing out from the blood in the urine or because we wish to find which micro-organism having got into the urine is acting locally to cause a pyelitis or cystitis. In the cases described there has been nothing to direct attention specially to the urine, and the explanation of the illness would have been missed had not the urine been thoroughly examined. Now we will take examples of cases in which there is something obviously wrong with the urine.

Hæmaturia due to Bacillus Coli, &c.

There is at the present time under my care in Guy's Hospital a woman, aged 70, who is suffering from a granular kidney. She had scarlet fever at the age of 40, has œdema of the eyelids, thick arteries, a hypertrophied heart, blood pressure of 165, albuminuria, and intermittent hæmaturia. We know that persons who have granular kidneys may bleed from their urinary tract, just as they may bleed from the nose or into the brain, and I have always accepted this explanation of hæmaturia in the course of granular kidney, and post-mortem experience shows us that it is certainly sometimes the correct explanation, but this woman has abundant colon bacilli in her urine, and this may be the cause of her hæmaturia. In the future we must examine the urine bacteriologically in every case of granular kidney with hæmaturia before deciding upon the cause of the bleeding. That micro-organisms will cause hæmaturia there can be no doubt. Patients are often admitted for this symptom only. Stone is suspected but none is found. In such a patient recently we found bacillus coli in the urine, and in another patient streptococcus longus. It is well known that hæmaturia is an occasional complication of pneumonia, and I have always assumed that this is due to a pneumococcal nephritis. Perhaps it often is, but in two cases of hæmaturia with pneumonia recently under my care no pneumococci could be found in the urine, but there were plenty of bacillus coli. A child was recently admitted under my care suffering from pneumococcal septicæmia. Pus from the elbow contained pneumococci. The urine was examined merely as a matter of interest, and although it contained some cocci about which the bacteriologists would not give an opinion, it certainly to my surprise contained bacillus coli.

Some patients who owe their hæmaturia to bacillus coli are often thought to have subacute nephritis. For example, a lady had pyrexia which was attributed to influenza, the temperature did not subside, and soon blood appeared in the urine; she was then thought to have subacute nephritis, and as the hæmaturia and pyrexia continued the outlook was regarded as very gloomy, but a pure culture of bacillus coli was obtained from the urine. She was treated by vaccines and urotropine, and she got perfectly well. A child, aged 9½ years, had the following history. At the age of 4 she caught a cold, and this was said to have gone to the kidneys; since then she has had, on and off, periods of several weeks during which she passes blood in the urine which contains epithelial and blood casts.

Some practitioners who have been consulted have feared Bright's disease, but on examining the urine it is found to contain large numbers of bacillus coli, and they are in all probability the cause of the trouble. No doubt they have set up a mild nephritis, but a nephritis due to bacillus coli was almost certainly not what those who had seen her meant when they said they feared Bright's disease, for it is only recently that the importance of bacteriological examination of the urine has been appreciated, and only recently that micro-organisms have been looked for in the urine of this child. A lady, aged 45, was found to have a little albumin in her urine; this made her seriously depressed, for she said she was sure she had chronic Bright's disease. But she was found to have pyorrhœa alveolaris. Staphylococcus aureus was found in the pus around the teeth, and also in the urine. In all probability this is the cause of the albuminuria, and she ought to be rid of it when the pyorrhœa is cured.

Cases Simulating Renal Calculus.

In many patients with urinary infection the pain is so severe that they are thought to have a renal calculus, and perhaps some of the numerous cases in which a surgeon explores the kidney without finding the expected stone are really instances in point. I will give you a few examples of this severe pain. A lady, aged 51, had for four months pain in the bladder, pain on micturition, occasional feverish attacks, and pus and blood in the urine. A diagnosis of vesical calculus was made, but the X rays and a sound both failed to find a stone. The urine was found to contain numbers of bacillus coli, and after treatment with an autogenous vaccine and urotropine she got perfectly well. Fifteen months later there was a little urinary irritation but no albumin in the urine, which this time did not contain bacillus coli but streptococcus pyogenes longus. A lady, aged 50, had pain in the right renal region and frequent micturition. Bacillus coli was found in the urine and under treatment disappeared; the pain and frequent micturition ceased. Some months later she again had pain radiating from the right kidney so exactly like renal colic that her medical attendant who had treated her in her former illness thought she must have a renal stone. She was X-rayed. No stone was found, but the urine again contained bacillus coli.

It is well known that the onset of pain due to bacillus coli may be quite sudden. A woman was seized with sudden pain exactly like colic due to a calculus in the right renal pelvis or ureter; it was so severe that it doubled her up. She was taken from her work, was brought to the hospital, and admitted at once. No evidence of a stone except the pain was found, but the urine contained plenty of bacillus coli, and treatment for this cured her. Sometimes the pain may be right across the loins like lumbago, and when we meet with intractable examples of this disorder it is well to look for micro-organisms in the urine. But it must be borne in mind that occasionally bacillus coli and other micro-organisms may be found in the urine of those who have renal calculi, especially if these have led to pyuria; but micro-organisms may be present even when there is no pyuria, and probably the severe rigors, pyrexia, and vomiting which are often associated with a stone in the renal pelvis or ureter are due to the fact that the stone causes a slight abrasion of the mucous membrane, and the micro-organisms in the urine thus obtain entrance into the blood.

The following case suggests that bacillus coli in the urine may cause a pain which is thought to be due to gall-stones. A lady, aged 84 years, had for some time had an irregular temperature with slight attacks of shivering. She was thought to be suffering from cholecystitis due to a gall-stone, for she was told in former years that she had gall-stones, but she had frequency of micturition. The urine contained a little albumin and bacillus coli. Probably her illness was due to this, and not to gall-stones.

Urinary Infection in Nervous Diseases.

Bacteriological examination of the urine may help us much in the cases of cystitis and pyelitis associated with disease of the nervous system. Four years ago I saw an old lady over 80 years of age. A few weeks previously slight left hemiplegia had come on; since then cystitis had slowly developed. Bacillus coli was isolated from the urine and a vaccine was prepared; she was treated only with this and the cystitis cleared up completely. I have notes of the bacteriological examination of the urine in six other cases of chronic nervous disease—viz., myelitis, paraplegia, cerebral diplegia, syphilitic myelitis, disseminated sclerosis, and acute diffuse myelitis. In every one of them the cystitis was apparently due to bacillus coli, which was constantly present; in two streptococcus longus was present as well. Many of these patients had never had a catheter passed, so that we learn that with certain nervous diseases there is a special liability to the invasion of the urinary tract by the bacillus coli. Why this should be so is not clear. Four of my patients were men, and it is difficult to believe that the bacillus passed up the long male urethra. Further work ought to be done on the subject of urinary infections in diseases of the nervous system, but this practical result follows—namely, that the cystitis associated with nervous disease is very frequently due to bacillus coli, and that it is consequently best treated by urotropine, acid sodium phosphate, and an autogenous vaccine.

Among the miscellaneous cases that have had the urine examined bacteriologically, it is interesting to note that tubercle bacilli were absent from each of four cases of tubercular peritonitis; the urine of three was sterile and the other contained bacillus coli. The urine of eight patients suffering from typhoid fever was examined. In none were typhoid bacilli found. That of one was sterile, three patients showed bacillus coli only, one showed this micro-organism and streptococcus brevis, one showed streptococcus longus only, two contained organisms which were probably only a result of accidental contamination, one showing bacillus mesentericus alone, and the other this micro-organism and streptococcus brevis.

Bacilluria during Pregnancy.

A few years ago we were ignorant of the existence of bacillus coli in the urine of pregnant women; now we know it to be common. One wonders to what the illness of the patients was formerly ascribed. As far as I can remember the first case of bacillus coli infection in pregnancy which I recognised was admitted under me seven years ago; the urine contained a pure culture. Since then I have seen many cases, and I do not think that now they ought to be overlooked. The symptoms associated with the micro-organisms vary very much in severity, so much so that we want a systematic examination of the urine of some hundreds of pregnant women, for often the symptoms are so slight that it is difficult to avoid a suspicion that the bacilli may be found in the urine of pregnant women even when there are no symptoms suggesting that they are there. Certainly the symptoms often subside and yet the bacilli remain; for how long we do not know. It would be a very valuable observation to examine the urine of these patients systematically at regular intervals for months after the disappearance of clinical symptoms. We at present have much to learn about the disease, for as the symptoms vary so much, and the bacilli are still present after the symptoms have disappeared, either the micro-organisms themselves must be very changeable[3] or other factors than the bacilli must contribute to determine the clinical variety of the patient's illness. We have already seen that there is as yet no perfect explanation as to why colon bacilli should appear in the urine during pregnancy; there certainly is a liability for them to be found there in other conditions, for they are by far the commonest pathogenic micro-organism in the urine. They are found in nervous diseases, after typhoid fever, and during tubercular peritonitis. The symptoms of coli infection of the urine in pregnant women are the same as in those who are not pregnant, and in both there may be either cystitis, pyelitis, or pyelonephritis, and these may exist in the same patient. The right kidney is much more often affected than the left, but both may be affected. We have already considered several examples of the condition in women who are not pregnant, so there is no need to give other examples taken from those who are. The best way to avoid missing these cases is always to think of the possibility that the presence of bacillus coli may explain illnesses

[3] On this point Dr. J. W. Eyre writes to me to say that he frequently finds that bacillus coli in the urine undergoes a change so far as concerns its secondary fermentation characters—that is to say, a colon bacillus which when originally isolated was capable of fermenting almost all the carbohydrate media ordinarily employed, after treatment for a month, may fail to ferment glycerine or dextrose or inulin. He then advises a vaccine prepared from the altered bacillus. The bacillus may alter yet again, and then a corresponding vaccine is given. Finally, the bacillus disappears from the urine.

that occur during pregnancy. Sometimes the symptoms are so trivial that their true cause is overlooked; sometimes they are so severe that they mislead, as the following case shows. A pale young woman was, during the fifth month of her first pregnancy, seized with severe fever, and the temperature remained raised for seven weeks. She had a hæmic murmur which led to a diagnosis of malignant endocarditis, and consequently a very bad prognosis was given. Later on the urine was examined and found to contain some pus and plenty of bacillus coli. She was treated with urotropine and an autogenous vaccine; she got quite well and was confined at full time of a healthy child. The following case shows how little may be wrong with the urinary tract and yet how ill the patient may be. A young married woman was admitted during the sixth month of her second pregnancy. She was suddenly seized with acute pains in the abdomen, especially on the right side. The pain was so severe that she was brought at once to the hospital and admitted immediately. Her temperature was 103° F., and there was some diarrhœa. She had had slight frequency of micturition; she was tender over the right kidney and ureter, but the urine only contained minute quantities of pus but plenty of colon bacilli. She was very ill and her temperature was often 103° for a week after admission, but under the usual treatment she got quite well. I have not seen any case so severe that the patient has not got well by medical treatment. As far as my experience at present goes it is never necessary to induce premature labour nor to perform any operation upon the affected kidney.

BACILLURIA IN CHILDREN.

The contamination of urine by micro-organisms, even when it is withdrawn from the bladder with aseptic precautions, is not uncommon in children; and as in adults so in them, female children are more affected than male children, the right kidney is much more frequently implicated than the left, and bacillus coli is by far the commonest micro-organism. Thus W. M. Jeffreys[4] records that out of 60 cases examined at Great Ormond-street 53 were females and 7 males; if only one kidney was affected the right was four times more often implicated than the left; and of the 60 cases the micro-organism was the bacillus coli in all but 6. John Thomson[5] published 25 cases all under 2 years old; 21 were girls, and in all bacillus coli was the micro-organism present. Broadly speaking, the younger the patient the more severe the symptoms, and it is very necessary to remember that the temperature may be very high and the child dangerously ill, and yet there may be only a trivial amount of pus in the urine. The onset may be sudden, the temperature rising rapidly to 104° or 105° F., and often there are rigors or convulsions. Considering that rigors are not common in young children, it is interesting to remember that Thomson states that he has never seen a baby under 2 years of age who was described as having a regular rigor and who had not pus in the urine. The child may be very ill even before pus appears in the urine, but it always appears soon. It is clear that the early diagnosis may be difficult, and it behoves us to examine the urine for bacillus coli if there is no other obvious cause for a sudden severe illness of a child. In a bad case, as with any other illness in a baby that is associated with high temperature, drowsiness, delirium, squinting, and other nervous symptoms are often very obvious. In more than half Jeffreys's cases there were symptoms pointing to disturbance of the bladder, and the most frequent was painful micturition. In several there was distinct evidence of pyelitis. Nine of his 60 cases died, 6 from urinary trouble and 3 from some other disease, 23 were discharged as improved, 21 as cured, and 6 as unchanged. He lays particular stress on the fact that in many of the affected children there is some disorder of the bowels. We have already discussed the significance of this. It will not be forgotten that although in children the disease is usually severe, yet bacilluria due to presence of bacillus coli in the urine may cause no other symptoms than enuresis or an increased frequency of micturition. For further details of coli infections of the urine in children the papers of John Thomson and W. M. Jeffreys should be consulted.

[4] Quarterly Journal of Medicine, vol. iv., p. 267.
[5] Ibid., vol. iii., p. 251.

TREATMENT: USE OF AUTOGENOUS VACCINES.

Various treatments of the illness associated with bacillus coli in the urine have been advised, and in estimating their value regard must be paid to the great variation in the severity of the cases and to the fact that some get well without any treatment. The patient should certainly be put to bed and have plenty of fluid to drink. Those who attach much importance to the state of the intestinal tract will, if there are any symptoms that this is disordered, try to get it into a healthy condition. Alkalies have been largely used, and some think with great benefit. They are given because it is thought that bacillus coli will not grow in an alkaline fluid, but in reality it will grow equally luxuriantly in either alkaline or acid urine. My usual treatment is to give plenty of urotropine; say, 10 grains dissolved in water four or five times a day for an adult, together with from 10 to 20 grains of acid sodium phosphate dissolved in water every hour the patient is awake so as to keep the urine acid, for urotropine acts by the liberation of formaldehyde in the urine in proportion as that fluid is acid. I usually also use an autogenous colon vaccine, giving an adult from 3,000,000 to 5,000,000 for the first dose, a second similar dose is given three days afterwards, and later from 20,000,000 to 50,000,000 are given once a week. Even with most thorough treatment it is often difficult or impossible to get rid of the micro-organism from the urine, but that seems to me the very reason why every means should be taken, and therefore I use vaccines as well as urinary antiseptics. Certainly patients benefit while on this treatment, although often the illness passes away, but the micro-organisms remain in the urine. When this is so it may be that the bacilli having changed their character a fresh autogenous vaccine is desirable, but we must have a much larger experience before we know whether a change of vaccine causes the bacilli to disappear more rapidly than they would if vaccines were discontinued altogether after the subsidence of symptoms.

Before leaving the subject of this address I should like to insist that the urine should be collected with great care by means of a sterilised catheter directly into a sterilised glass bottle, which must be at once sealed air-tight. In the male, if there is strong objection to the use of a catheter, the foreskin should be retracted, the glans and meatus should be carefully cleansed with an antiseptic, and then the urine, after a little has flowed, should be passed straight into the bottle. A sterilised catheter should always be used for women, and care must be taken to prevent its end touching the vulva as it is introduced. If a catheter is not used, however carefully the vulva is cleansed, the urine may, from contact with its folds, become contaminated with bacillus coli and other organisms. It is usually preferable that the urine should be collected by the doctor and not by the nurse.

Almost all the bacteriological work in connexion with the cases here reported has been carried out in the bacteriological laboratory of Guy's Hospital under the supervision of Dr. J. W. Eyre, to whom I am much indebted.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of the directors of this society was held on Oct. 9th, the Right Hon. Sir Thomas Boor Crosby, Lord Mayor, President of the society, being in the chair. Seventeen directors were present. Three gentlemen were elected members of the society. The sum of £514 was voted to be distributed at Christmas amongst the annuitants of the charity, each widow to receive £10, each orphan £3, and each orphan on the Copeland Fund £10. This is in addition to the half-yearly grants made in January and July. The society only grants relief to the widows and orphans of its deceased members, and the secretary is constantly receiving letters from widows of medical men asking for relief, but this has had to be refused as their husbands had not joined the society. Membership is open to any registered medical practitioner who at the time of his election is resident within a 20-mile radius of Charing Cross. The annual subscription is 2 guineas, and there are special terms for life membership. The invested funds of the society now amount to £101,600. Further particulars and application forms for membership may be obtained from the secretary at the offices of the society, 11, Chandos-street, Cavendish-square, London, W.

THE HISTOLOGY OF EXPERIMENTAL RHEUMATISM.

BY CAREY COOMBS, M.D. LOND., M.R.C.P. LOND.,
ASSISTANT PHYSICIAN, BRISTOL GENERAL HOSPITAL;

REGINALD MILLER, M.D. LOND., M.R.C.P. LOND.,
PHYSICIAN TO OUT-PATIENTS, ST. MARY'S HOSPITAL AND PADDINGTON-GREEN CHILDREN'S HOSPITAL;

AND

E. H. KETTLE, M.D. LOND.,
ASSISTANT PATHOLOGIST TO THE CANCER HOSPITAL; LATE ASSISTANT PATHOLOGIST, ST. MARY'S HOSPITAL.

WE have been at work for some time at the problem of rheumatic infection, and though the results we are about to relate are meagre, owing to the great difficulties which throng the subject, we feel that they are of such interest and significance that they should be reported without further delay.

It is now 12 years since Poynton and Paine[1] first published their account of the bacteriology of rheumatic infection. They were able to show, with notable uniformity over a wide series of observations, that the organism recovered was a small diplo-streptococcus, which, inoculated into rabbits, provoked arthritis and carditis, as well as other lesions. Vernon Shaw[2] proved that the results of inoculation into monkeys were similar to those of the rabbit experiments. Since that date the same achievements have been repeated by Poynton and Paine,[3] and also by Beattie,[4] Ainley Walker,[5] Longcope and Lewis,[6] Bracht and Wächter,[7] and others.

The reasons why the streptococcus rheumaticus has not met with general acceptance are in the main twofold. First, a number of bacteriologists have failed to isolate it from cases of rheumatic infection (Bulloch,[8] Horder,[9] Marchildon,[10] &c.). Most of these observations have been absolutely negative—no organism whatever being found; while a few investigators have claimed a bacillus as the infective agent (Achalme,[11] Thiroloix and Rosenthal,[12] &c.). Secondly, others consider that culture tests prove that the streptococcus of Poynton and Paine is indistinguishable from other forms of streptococci. Such, for instance, is the argument advanced by Horder,[13] who found, as others have, that a large proportion of all cases of chronic infective endocarditis were due to streptococci similar in many respects to those non-pathogenic varieties which inhabit the alimentary tract under normal conditions. Those who take this view point to the work of Cole[14] and others[15] as proving that various streptococci of this class may cause articular lesions after inoculation into animals. The suggestion towards which these arguments lead is that the association of streptococci with rheumatism is accidental, not causal. To this suggestion it has hitherto been difficult to reply. The cultural classifications of streptococci upon which is based the statement that the rheumatic streptococci are not different from various other types have, it is true, been proved unsound (Ainley Walker,[16] Beattie and Yates[17]). This does not, however, prove the case for the streptococcus rheumaticus, though it invalidates part of the case against that organism.

The reason why it has been difficult to say "streptococci isolated from human rheumatism *have* produced rheumatism in rabbits" has principally been this, that it has been impossible to define "rheumatism in rabbits." Is polyarthritis meant? Then we know it can be produced by various forms of streptococci and other organisms in rabbits as well as in man. It is not enough even to say that it is a non-suppurative arthritis, for so also are some of the other forms. Neither does the cardiac inflammation of rabbits inoculated with streptococcus rheumaticus yield a more definite argument, for macroscopically and in its clinical course it is unlike the relapsing pancarditis of human rheumatic infection, in that it is of a grosser and more quickly fatal type. It is true that this difference is no more than might be expected when the smallness of the animal inoculated and the largeness of the dose of bacteria are remembered; but it has sufficed to weaken seriously the argument in favour of the streptococcus rheumaticus.

We determined, therefore, to attack this problem afresh from the histological point of view, to answer this question: Do the rabbit lesions which follow inoculation with streptococci isolated from human rheumatism correspond microscopically with those of human rheumatism or not? Our results hitherto have been few, but such as they are they enable us to reply to this question in the affirmative. This reply carries considerable weight, for it has been shown in recent years that the histology of human rheumatism has certain definite features to which we shall presently refer.

In this paper we shall first describe the histology of the lesions produced in rabbits by the inoculation of streptococcus obtained from cases of human rheumatism by ourselves and others; secondly, we shall compare the histology of experimental and human rheumatism; and thirdly, draw such conclusions as appear to us to be warranted by our observations.

1.—*Histology of Experimental Rheumatism.*

In our experiments we made use of two streptococci (A and B) obtained from cases of human rheumatism.

Coccus A.—For this organism we are indebted to the kindness of Dr. Graham Forbes. It was originally obtained from the following case:—

A girl, aged 8 years, was admitted to the Hospital for Sick Children, Great Ormond-street, under the care of Dr. A. E. Garrod, on Feb. 17th, 1910, for pallor and shortness of breath. She had been ill for three weeks with shortness of breath, cough, and some vomiting. She became very white and thin; worse for past two weeks. No history was obtained of rheumatic pains or chorea, either associated with the present illness or previously.

On admission the child was very pale, cyanosed, and restless. Temperature 97·2° F., pulse 140, respiration 52. The heart was dilated two inches to right and left, sounds feeble; systolic murmur at apex conducted into the left axilla. Epigastric pulsation and tenderness. Liver palpable three inches below the costal margin; spleen not palpable. Some œdema of legs. The child died four hours after admission.

Necropsy.—This was performed 17 hours after death. Heart: Pericardium contained a little clear straw-coloured fluid; no obvious pericarditis. The heart weighed 6¼ oz. and was much dilated, particularly the right auricle and ventricle. Some hypertrophy was present; muscle pale, soft, and striated. The mitral orifice admitted two fingers. The mitral valve was somewhat thickened and completely fringed with recent vegetations, small and equal in size. Chordæ tendineæ were a little shortened. Tricuspid valve was similarly fringed completely round with recent vegetations; valve not thickened. Aortic valve not thickened; on each cusp was an irregular mass of vegetations, rather larger than on the other valves, in the central part of the cusp. Pulmonary valve, normal. Mural endocardium not affected. Lungs normal. Brain normal. Liver enlarged and fatty, congested. Spleen somewhat enlarged and very firm. Kidneys pale. No infarcts in any organs. Other organs normal. Pathological diagnosis: rheumatic endocarditis.

Bacteriological report.—Heart's blood, sterile in broth and on agar. Tricuspid vegetations, pure growth of streptococcus in broth and milk and broth. *Description of organism.*—The coccus was a small one, giving a somewhat granular growth in broth, and small clear colonies on agar. It grew best on fresh blood-agar. In broth the organism grew in moderately long chains, but on solid media it grew as a short streptococcus or diplococcus. In smear preparations of the exudate of joints it appeared as a diplococcus, but in pericardial fluid (Rabbit 10, &c.), after 18 hours' incubation, it appeared as a long-chained streptococcus. The coccus is Gram-positive, but could be fairly easily decolourised. It gave the following reactions: litmus milk, saccharose, lactose, salicin, mannite, positive; raffinose and inulin, negative.

Experiments with Coccus A.—Rabbit 8.—Inoculated intravenously with three tubes of 18 hours' growth on fresh blood-agar on April 2nd, 1910. Two days later the right paw was spared. On April 6th the hind limbs were dragged; the next day the knees were swollen, and the animal was killed on April 8th.

Necropsy.—The knees showed excess of fibrinous exudate within and around the joints. The heart was dilated; there was no obvious endo- or peri-carditis. Pure culture of streptococcus was obtained from the heart's blood and from the affected joints.

Histology.—Heart.—In the myocardium are foci which appear to be inflammatory. They lie between the muscle fibres, usually in relation with blood-vessels. They are small, and rather diffuse in arrangement. The cells of which they are composed are fibroblasts and leucocytes (polymorphonuclear and mononuclear), with a predominant proportion of large cells with a considerable share of cytoplasm and one or more clear refractile nuclei. These foci are similar in most respects to the myocardial "submiliary nodules" of human rheumatic carditis, though these latter are larger than the experimental ones. Some of the capillaries and arterioles of the myocardium show endothelial proliferation; so also does the surface of the mitral valve, though in this latter case the change is very slight.

Joint.—The synovial membrane shows formation of many fibroblasts, also of new capillaries. The vascular endothelia are proliferating—in some instances so much as to obliterate the vessel. In places there are groups of cells with much cytoplasm and one or more clear, transparent nuclei. Several vessels are completely occluded by thrombosis, others by masses of homogeneous material mixed with micro-organisms. The whole of the synovial membrane and periarticular tissues are infiltrated with eosinophile leucocytes, which also are poured out freely into the cavity of the joint. A few of these are degenerating, but for the most part they have kept their structure well.

Rabbit 10.—Inoculated with coccus obtained from joint of Rabbit 8. Two tubes of blood-agar culture given intravenously on April 30th, 1910. On the third day there was some swelling of the knees, which gradually subsided. On August 13th one tube of blood-agar culture given hypodermically; result negative. On Sept. 9th the same dose was given intravenously. Later there developed swelling of the left knee and carpus, and the animal appeared ill. It died on Sept. 25th.

Necropsy.—Pericardium showed some infection, with petechial hæmorrhages on the visceral layer; it contained a little blood-stained fluid. The mitral valve showed large vegetations extending along most of the edge. There were small infarcts in the spleen and kidneys. Pure cultures of streptococci were obtained from the heart's blood and pericardial fluid.

Histology.—Heart.—The myocardium shows many arterioles plugged by masses of fibrin and cocci. There is a marked polymorphonuclear leucocytosis, concentrated chiefly into perivascular foci; most of the leucocytes are in good condition and display the eosinophilic appearance found in rabbit lesions. At least one fairly large artery is closed by inflammatory thrombosis. Many of the perivascular leucocytoses are clustered round masses of cocci. In many capillaries the endothelium is turgid and proliferating, and in several this proliferation has proceeded so far that the lumen has quite disappeared, the result being an area of large cells with sharp-stained nuclei and plenty of cytoplasm, interspersed with a few leucocytes. In some such spots the vessel's outlines have almost disappeared, and the picture that emerges is a close reproduction of the "submiliary nodule," the background consisting of fibrin and cellular débris. There are more mononuclear cells than in many such nodules, but in this there is a likeness to the acutest cases of human carditis. Around the vessels and between the fibres many fibroblasts are seen. The muscle cells show no gross alteration.

The *mitral valve* is inflamed; at its base and near its free edge, on its auricular surface, are areas of endothelial proliferation and desquamation, covered by masses of fibrin, polymorphonuclear leucocytes, and streptococci. Some fibroblastic reaction and possibly a young "nodule" are seen in the depths of the valve, but there is hardly any sign of formation of new capillaries. The reaction is, therefore, not intense, and the hugely disproportionate masses of cocci must be largely accounted for by depositions from the intracardiac blood.

The *mural endocardium* is in several places implicated in the areas of the myocardial inflammation. Here there is fibroblastic reaction with endothelial proliferation and stripping, and fibrinous deposit on the stripped surface. In one spot the pericardial enthothelium is proliferating, and just beneath there is a perivascular "nodule" lying in the midst of the subpericardial fat.

Lung.—A large number of capillaries show endothelial proliferation, in many instances occluding the lumen entirely. These changes are almost exclusively limited to capillaries and small veins. There are several areas of infarction. The blood in the larger vessels contains a number of endothelial cells, some of them undergoing division; many of these lie in mid-stream, and have probably been brought thither from the inflamed vessels of systemic organs.

Joint.—Apart from the presence of a few small emboli, the picture is a perfect copy of the human counterpart. Throughout the synovial membrane there is a diffuse fibroblastic reaction, very intense, but almost without leucocytosis. Practically all the small vessels, and most of the large ones, display a very definite endothelial proliferation. There are also fibroblastic rings around them. The endovascular reaction has in one or two places ended in thrombosis; but as a rule it reaches its highest expression in the formation of typical "sub-miliary nodules." This joint is, therefore, an almost exact reproduction of the articular lesion in man.

Spleen.—Here there is a large white infarct, but the vascular changes seen elsewhere are not prominent.

Kidney.—The vessels, especially of the glomeruli, contain fibrinous and coccal emboli, which have caused infarctions and provoked a brisk but patchy leucocytosis. Several medium-sized vessels are thrombosed and there are small patches of inflammatory reaction of formative type, showing fibroblasts, new capillaries, and endothelial proliferation. In one spot, against a thrombosed vein, this reaction has produced a "nodule." Spots of productive inflammation are sometimes seen in the kidney in human rheumatism.

Rabbit 11.—Inoculated intravenously with one tube of broth culture (18 hours), the first culture from the joint of Rabbit 8, April 9th, 1910. On the third day some tendency to spare one limb; quickly recovered. On Sept. 9th, two tubes of 24 hours growth on blood agar were given intravenously. 16th: Left knee very swollen, rabbit ill. 27th: Animal moribund, swelling of left wrist developed; killed.

Necropsy.—Arthritis of knee and wrist. Mitral endocarditis. Old infarcts in kidney and spleen. Pure culture of streptococcus obtained from heart's blood.

Histology.—Heart.—Myocardium.—There is a scattered inflammatory reaction of the human type—i.e., consisting almost entirely of nodules, which appear to arise as in man by proliferation of capillary endothelia. Fibroblasts and a few leucocytes also enter into these areas. There are only a very few of the small purely leucocytic foci so plentiful in the heart of Rabbit 10. There are, however, several large areas of inflammatory reaction surrounding what appear to be gross thrombotic lesions, and extending into the subpericardial fat on the one aspect and into the endocardium on the other. The type of reaction is characteristically "rheumatic"; there is almost no leucocytosis, but an extraordinarily profuse formation of fibroblasts and also of new capillaries, mingled freely with endovascular proliferation developing in many spots into typical "nodules." In these inflammatory areas the muscle fibres are broken up and continuously absent over quite large tracts.

Pericardium.—Though the whole subpericardial fat is inflamed and shows endovascular proliferation very clearly, the serous membrane itself appears to be intact.

Endocardium.—There are two districts of endocardial inflammation: the mural lesions, directly continuous with the large myocardial foci just described, and separate inflammatory spots in the mitral valve. In both instances there is a profuse formation of fibroblasts; in the mural areas there are also new capillaries and nodules. The mitral valve does not show these latter changes, but fibroblastic reaction extends throughout it from base to tip. On the surface of both types of lesions there are minute ulcers infiltrated with leucocytes, containing Gram-variable streptococci in small masses, and covered with a considerable bulk of clot. The relation of the coccal masses to the mitral valve seems to indicate that they first arrived in its depths and only broke through to the surface later. In at least one spot the cocci lie quite deep to the surface in the centre of the valve.

Lung.—There are the same endothelial proliferations in the capillaries that were seen in Rabbit 10. These changes are not associated with the presence of cocci. The cells within the alveoli are composed of leucocytes and desquamating epithelium. The *spleen* showed no special changes.

Joint.—This displayed a reaction similar to that of Rabbit 10, though much milder and less universal.

Kidney.—One or two leucocytic foci were noted, and endothelial changes within the capillaries ranging from simple turgescence through desquamation to occlusion. These were associated with more or less fibroplasia and formation of new capillaries; all of it being particularly prominent in localised areas, in which the tubules were atrophied, and in some instances much distended.

Coccus B.—For a growth of this organism we are indebted to Dr. A. Paine, who in conjunction with Dr. F. J. Poynton had used it for experiments which are detailed in a paper published in 1910.[17] The organism was obtained originally from a case of rheumatic arthritis, endocarditis, and hyperpyrexia under the care of Dr. A. F. Hertz at Guy's Hospital. The following are the salient points from an account of the patient's illness kindly given us by Dr. C. H. Rippmann, medical registrar to Guy's Hospital.

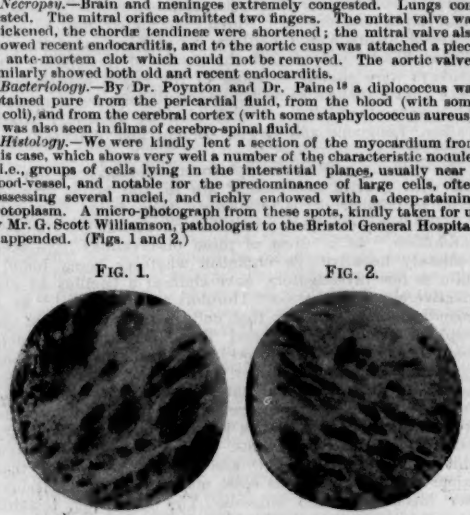
A male, aged 19 years, five years before had chorea followed by rheumatic fever. On July 30th he got wet and began to have pains in his joints. He stayed in bed for three days, and was then admitted into Guy's Hospital. All the joints were painful, the right wrist being swollen. There was profuse sweating. The heart showed a mid-diastolic apical bruit. He was treated with salicylates and his pains improved. On August 6th he was slightly delirious and the salicylate was omitted. On August 8th he became very delirious and later comatose. The rectal temperature was 109° F., and after cold baths and rectal infusions of ice water varied between 105° and 107°. He continued in this condition until August 9th, when he died from heart failure.

Necropsy.—Brain and meninges extremely congested. Lungs congested. The mitral orifice admitted two fingers. The mitral valve was thickened, the chordæ tendineæ were shortened; the mitral valve also showed recent endocarditis, and to the aortic cusp was attached a piece of ante-mortem clot which could not be removed. The aortic valves similarly showed both old and recent endocarditis.

Bacteriology.—By Dr. Poynton and Dr. Paine[18] a diplococcus was obtained pure from the pericardial fluid, from the blood (with some B. coli), and from the cerebral cortex (with some staphylococcus aureus). It was also seen in films of cerebro-spinal fluid.

Histology.—We were kindly lent a section of the myocardium from this case, which shows very well a number of the characteristic nodules—i.e., groups of cells lying in the interstitial planes, usually near a blood-vessel, and notable for the predominance of large cells, often possessing several nuclei, and richly endowed with a deep-staining protoplasm. A micro-photograph from these spots, kindly taken for us by Mr. G. Scott Williamson, pathologist to the Bristol General Hospital is appended. (Figs. 1 and 2.)

FIG. 1. FIG. 2.



1. Nodule from myocardium of left ventricle of man from whom coccus B was grown. 2. Nodule from myocardium of Rabbit 10. In each the predominant feature is the formation of large cells, often multinucleate, of endovascular origin. (× 1/12 in. oil immersion lens.)

Description of coccus B.—In appearance and cultures this organism closely simulated the coccus A already described. It grew in long chains in fluid media and incubated pericardial fluid; in short chains on solid media. Its reaction to Gram's stain was the same as that of coccus A. Its sugar reactions were not tested.

Experiments with coccus B.—Six rabbits were inoculated intravenously; of these, four showed arthritis; no endocarditis or pericarditis was produced, although these had been obtained by Dr. Poynton and Dr. Paine working with the same organism. The histological changes were most definite in Rabbit 3 (*vide* later).

Rabbit 3.—Inoculated intravenously with 30 minims of a culture of coccus B on Oct. 29th, 1909. On Oct. 25th the right knee was painful and leg spared. On the 29th the joint was swollen and the rabbit was killed. Post mortem there was an excess of greyish-white gelatinous exudate in and round the right knee. Heart appeared little dilated; no endo- or pericarditis.

Joint.—The material here did not permit of a thorough study as (by some mistake in its preparation) it stained badly. However, it was possible to distinguish a diffuse fibroblastic reaction in the synovial membrane, with free formation of new capillaries, and endothelial proliferation in the blood-vessels advancing so far in the smallest that their channels were occluded. Within the cavity of the joint there was an exudate consisting very largely of the polymorphonuclear leucocytes with eosinophilic granules which we have noted as relatively common in rabbit lesions.

We have also inoculated rabbits, with negative results, with two strains of streptococci isolated from rheumatic cases by Mr. G. Scott Williamson, who kindly gave us cultures for this purpose. One strain was grown from the cerebro-spinal fluid of a child with chorea and carditis who

subsequently recovered; the other was taken post mortem from the articular fluid of a girl with severe rheumatic polyarthritis and carditis. In this latter instance small diplo-streptococci were also seen in films of the articular fluid and in sections of the synovial membrane. The cultural characters of these organisms were examined by Mr. Scott Williamson as part of a hitherto incomplete research into these and allied streptococci.

Material has also been supplied us for histological examination by Professor Martin Beattie, Dr. W. Vernon Shaw, and Dr. W. T. Longcope. In all cases the organs were from rabbits inoculated with the streptococcus rheumaticus; in Dr. Shaw's specimens the coccus was from a strain lent by Professor Wassermann of Berlin ("streptokokkus aus chorea.")[19]

Professor Beattie's material, from rabbits inoculated with a coccus isolated post mortem from the synovial membrane of a man dying in an attack of acute rheumatism, yielded the following results.

In the *joint* we examined some parts of the synovial membrane were occupied by a diffuse inflammatory process, marked by free formation of fibroblasts, especially about the smaller vessels, and by proliferation of the endothelial cells of these vessels. New capillaries were also seen in process of formation, and in more than one spot the endovascular proliferation had resulted in the development of typical submiliary nodules. In other areas these changes were overlaid and largely obscured by a polymorphonuclear leucocytosis. Even in these areas, however, there were no necrotic changes, and all the leucocytes stained well.

The *cardiac tissues* showed very little departure from the normal, but at least one immature nodule was seen, apparently originating in the formation of a group of new capillaries with proliferating endothelium. The endothelium at the base of the mitral valve was proliferating, some of it was stripped off, and the surface was thinly capped with fibrin. Around some of the vessels, particularly in the subendocardial tissues, there was a mild polynuclear leucocytosis, and in one or two parts concentric circles of fibroblasts. In some of the arterioles the endothelium was swollen and projecting into the lumen of the vessel.

In the *kidney* was one spot of interstitial inflammation. The chief features were mononuclear leucocytosis and formation of capillaries, also endovascular proliferation. The similarity between the cells arising from vascular endothelium and plasma cells was most striking. In another part of the sections the tubular epithelium was desquamating, but only moderately.

In the material sent by Dr. Vernon Shaw certain changes were found.

Nothing abnormal was seen in the *cardiac* wall. In a *joint* the similarities and differences between clinical and experimental rheumatism were exemplified very clearly. The reaction in the synovial tissues was mainly gathered together into rounded masses, curiously like the subcutaneous nodes seen in rheumatic children. Some of these consisted entirely of (*a*) many blood-vessels, most of them swollen or proliferating endothelium, sometimes so far developed as to constitute a "submiliary nodule" in embryo; (*b*) fibroblasts lying in every plane, but especially arranged in whorls around the blood-vessels; (*c*) a diffuse but moderate leucocytosis. In others (and here it is that the characteristics of the experimental type of lesion are exemplified) there were large masses which seemed to consist of streptococci—the material having been in glycerine several years stained indifferently—lying in the centre of the inflamed areas; round these masses the leucocytosis was more intense and there were definitely necrotic changes.

In the *lung* from this rabbit the same endovascular proliferation described in other animals was seen in very many of the smaller vessels. It should be added that in this, as in the other rabbit lungs, there were pneumonic patches and small areas of infarction. There were no special changes in the spleen and pancreas.

Dr. Longcope's material consisted of organs and tissues from three rabbits; in only one of them was there anything definite to be seen, but this is hardly to be wondered at, as the portions were merely odd remnants which Dr. Longcope very kindly allowed us to have, since he had no more to send us.

In the *kidney* of this rabbit some of the arterioles and glomerular capillaries were plugged by masses of very small cocci; around these there was a polymorphonuclear leucocytosis, which was moderate in comparison with the number of cocci provoking the reaction. Around one arteriole occluded in this manner fibroblasts and cells apparently derived from vascular endothelia were mingled with the leucocytes, and in other smaller vessels the endothelial cells were swollen, desquamating, and proliferating, in some instances so much so that the vascular channel was filled up. Elsewhere small spots were found in which the newly formed endothelial cells were the principal feature. Similar areas were found about the interlobular vessels of the *liver*, and the splenic vessels also exhibited endothelial hyperplasia.

For particulars of the case from which the micro-organisms were taken by Dr. Longcope, the reader is referred to the original paper.[6]

Conclusions.—There are three main deductions to be drawn from this series of observations:—

1. The lesions produced by inoculation of rabbits with different strains of streptococci isolated from cases of rheumatic infection were identical in their essential features. There were differences of degree; the joint lesions of Rabbit 3 were rather more intense than those met with in the other animals. Nevertheless, there were no real divergences between them in the type of reaction produced. We do not propose to enlarge on this fact, since it has already been dealt with by Dr. Vernon Shaw.

2. The lesions we found in these rabbits were substantially the same whatever the organ concerned. That this is so will be appreciated if the account of our findings is examined. In the heart muscle and in the endocardium, in one area of pericardium also, in the synovial tissue of the joints, in the kidney, and (up to a certain point) in the lung, the phenomena specially noticeable were formative in type and endovascular in origin. There were swelling, proliferation, and desquamation of endothelial cells, particularly those of the smaller blood vessels, in which also thrombosis was a common event; and a marked fibroblastic reaction in the connective tissues. In addition to these there were focal and diffuse polymorphonuclear leucocytoses, mainly in relation to blood vessels obstructed by masses of cocci. As a phase of the endothelial changes we marked the "submiliary nodule" of rheumatic infection in the cardiac muscle and valves, in the synovial membranes, in the kidney, and also in the lungs. This similarity of reaction to experimental rheumatic infection, whatever the tissues attacked, acquires its chief significance when compared with the corresponding similarity of human rheumatic lesions in the different organs injured.

3. The importance of our observations lies, however, chiefly in the fact that the lesions of human clinical rheumatic infection were reproduced in essential details in rabbits by inoculating them with streptococci isolated from patients suffering from rheumatic infection. As this statement, if true, goes far to complete the evidence in favour of the streptococcal nature of rheumatic infection, we feel that the grounds on which it is based must be fully stated.

2. *Comparison of Histology of Experimental and Human Rheumatism.*

Submiliary nodule in human and experimental rheumatism.—Of special significance is the discovery of the submiliary nodule, because specificity has been claimed for it. The first statement of this kind was made by Aschoff,[20] who (working with Tawara at a systematic investigation of the lesions of the myocardium associated with failure of the heart) examined a large number of hearts from infective and other diseases, and found inflammatory foci of a peculiar character in association with simple endocarditis of the rheumatic type, and with that alone. About the same time, Geipel[21] published several papers describing similar lesions in the myocardium in rheumatic heart disease, but rather questioning their specificity. In 1907[22] and 1908[23] one of us (C. C.) confirmed Aschoff's view that these lesionswere characteristically rheumatic, and that they were absent from other types of cardiac infection; and in 1911[24] the same writer was able to substantiate this claim by results obtained from a more extended investigation. At the present time he has examined hearts from 23 cases of rheumatic infection, and found submiliary nodules in the myocardium in 14. Some of the failures are accountable for, and it seems fair to say that a thorough search in any case of active rheumatic carditis will be rewarded by the finding of myocardiac nodules. The latest observations published are those of Fraenkel,[25] whose examination of 20 cases of cardiac rheumatism discovered submiliary nodules in all but three instances; he claims that the lesions are absolutely specific for rheumatism, and that until inoculation with the streptococcus rheumaticus has produced such lesions, that micro-organism cannot be accepted as the causal agent of rheumatic infection.

As to the absolute specificity of the lesion, we think it fair to claim that any case of cardiac *inflammation* characterised by the formation of submiliary nodules in the myocardium is thereby stamped as rheumatic, even in the absence of confirmatory evidence. One strong argument in favour of this view is the occurrence of similar "nodules" in other rheumatic lesions. In the paper already referred to,[24] one of us was able to show that they were to be seen in sections of inflamed valves, of pericarditis, of rheumatic arthritis, and of characteristic subcutaneous node. Since that paper was published, changes have been noted by the same writer in the pia mater from a fatal case of chorea, which seem to be the meningeal equivalent of the myocardial nodule. Dr. Vernon Shaw tells us he has found similar phenomena in cases of chorea.

On these observations we base our belief that the predominating occurrence of submiliary nodules in the muscular tissues of an inflamed heart may be accepted as proof positive that the inflammation is due to rheumatic infection.

Before passing on to a description of the nodule as seen in the rabbit, some account of its chief features as it appears in man must be given. The following description is quoted from a paper by one of us (C. C.)[21]:—

> The nodules consist of a groundwork of fibrin, surrounded and interrupted by various cells. Of these the most important are certain large cells which form the characteristic feature of the nodule; there are also leucocytes and plasma cells. The nodule varies in shape; sometimes it is globular, sometimes spindle-shaped, according to the plane in which it is cut, also according to the pressure exerted by surrounding tissues. ..... The characteristic large cells vary a little in shape according to the space in which the nodule develops; in rounded nodules the cells are often globular, but even in such nodules they may be fusiform, and this is the form they tend to take. That they are soft is shown by their taking shape from one another; a row of cells may so press upon one another as to give flat sides and quadrilateral outlines to each. The largest cell is of such a size that, measured from pole to pole, it is equal to a third or a quarter of the diameter of the microscope field as seen with 1000 magnifications. Its cytoplasm, which is very finely granular, takes both basic and acid dyes readily, so that the cell is a dark object in the field. In some, the cytoplasm looks opaque and the cellular outline is apt to be globular; such cells are probably being destroyed by toxins, perhaps by those which called them into being. There may be as many as seven nuclei in one cell, apparently without any definite plan of arrangement; though, as many of the cells are so narrow that they can carry but one nucleus abreast, they lie in a sort of chain along the long axis of the cell. The chromatin thread of the nucleus stains sharply with hæmatoxylin; each nucleus appears as a space bounded by a thin black line and clear centrally except for several sharp black dots which represent cross sections of the chromatin thread. Consequently, in a deeply stained cell there is a very striking contrast between the almost clear nucleus and the dark cytoplasm.
>
> The other cells, plasma cells and eucocytes (mononuclear, largely) which enter into the constitution of the nodules, do not need detailed comment, as they are in no way special to rheumatic lesions.

To this description should be added the fact that typical fibroblasts are also present; this was left out in the article, from which the above is taken, by an oversight. In the joints, the cardiac valves, and the subcutaneous node the rheumatic lesion is compounded of fibroblasts, new-formed capillaries, a few leucocytes, mainly mononuclear, and a sprinkling of submiliary nodules among these other changes. In the myocardium the fibroblastic element is less in evidence, so that the special features of then odule are more pronounced and the characteristic nature of the lesion more obvious.

Now, if the above description be applied to those focal lesions within the myocardium of our rabbits which we claim are submiliary nodules, it will be found to agree in essentials. First, the background, when there is one, consists of fine fibrillæ looking and staining like fibrin. Secondly, the predominant cell is one which corresponds to that described above. Some of the foci were nothing but small masses of these cells separated slightly from each other by the background substance which appears to be fibrin. In the majority the rabbit lesions differ from the typical human nodule in (1) their smallness; (2) their diffuse radiating distribution; (3) the predominance of cells with only one or two nuclei. In these respects they resemble the less typical form which the human nodule assumes in its earlier immature stages. In a heart recently examined, from a young girl aged 15, dying within the first week of a very acute attack of rheumatic fever, there were a great many myocardial nodules, the majority of them displaying these same variations from the average type of the lesions. Most of the rabbit nodules, as we have seen them, are therefore to be regarded as "early," the animals dying before the reaction attained its typical character. Those which were most like the lesion as it is usually seen in human rheumatic carditis were found forming a part of larger foci to be described presently both in the cardiac wall and in the valves.

Not only, however, in the heart were these small lesions found; characteristic examples were to be seen in the inflamed synovial membrane; while in the kidney and the lung we saw changes which were similar in essentials to the myocardial nodule of human rheumatism.

Vascular and other changes in experimental and human rheumatism.—We might be content to stop here and to claim that in reproducing that phase of the human reaction to rheumatic infection which is held to be most characteristic of the disease we have indeed achieved an experimental copy of rheumatism as it appears in man, by inoculation of rabbits with the streptococcus rheumaticus, but we wish to establish our claim on deeper foundations.

The submiliary nodule is only a phase—a characteristic one, but still only a phase—in a series of endovascular changes which appear in all rheumatic lesions. This series of phenomena is observed especially in connexion with capillaries; sometimes, however, for example, in the heart, fair-sized arteries may be similarly injured. The first stage is swelling of the endothelium, which then proliferates, sometimes so freely as to close entirely the lumen of the vessel. Sometimes the new endothelial cells are shed into the lumen of the vessel. In either case thrombosis is likely to occur, and it is from the combination, in varying proportions, of endothelial proliferation and thrombosis, associated finally with disappearance of the wall of the inflamed vessel, that the nodule appears to be formed. An account of the evidence on which this statement is based must be reserved for separate treatment. So far as this present subject is concerned, all that need be said is that in experimental rheumatic lesions these vascular changes are all plentifully represented, occurring apparently in the same order as in the human phenomena, and leading as in those also to the formation of the submiliary nodule. The only difference between the endovascular lesions of human and experimental rheumatism is that they are more pronounced in the latter; thrombosis of large vessels is commoner, and endothelial proliferation in the smaller vessels is more widespread. In the description already given we have laid stress upon the extraordinary universality of this latter lesion in the rabbit's lungs, a point on which Dr. Vernon Shaw remarked in a letter to one of us several years ago. This greater intensity of the vascular lesions in experimental rheumatism is only what is to be expected, as we hope to show presently.

The vascular phenomena of human and experimental rheumatism are identical in nature. But the identity of the two classes of lesion does not stop here. The formative reaction which is so characteristic of rheumatism in man is perfectly reproduced in the rabbit. As in the subcutaneous node and the inflamed valve, joint, pericardium or kidney of man, so in the valve, joint, myocardium and kidney of the rabbit, is there a most pronounced formation of fibroblasts and of new capillaries. The picture thus produced was characteristically exemplified in the cardiac muscle of rabbit 11; the only difference from the subcutaneous node of man was that the centre of the rabbit lesion was occupied by a large thrombosed vessel in which lay a mass of cocci. In several of the rabbit joints the histological features of the subcutaneous node and of the arthritis and endocarditis of man were most faithfully reproduced. The field is occupied by a dense fibroblastic reaction sprinkled with many new capillaries in various stages of development; leucocytes are comparatively few, and there is a relatively large proportion of the mononuclear types. In the smaller vessels the endothelial changes described above are seen, ending here and there in the formation of submiliary nodules.

Differences in the histology of experimental and human rheumatism.—So far, then, the identity of human and experimental rheumatism is clearly seen in the histological picture. In the rabbit, however, certain phenomena are present over and above those which are commonly seen in the rheumatic infection of man. The first of these is intense and widely diffused polymorphonuclear leucocytosis. This does occur in human rheumatism, but in a marked degree in the severest cases only, while in our rabbits, though it was moderate in proportion to the number of cocci exciting it, it was always present, and intenser than we have seen it in man—so much so, that in places the endovascular and fibroblastic reactions were quite obscured.

Added to this is the fact that necrotic phenomena are seen on a larger scale in the rabbit than in man. Perhaps the best example of this is in the valves of the heart. In man, as is well known, there are areas of quite superficial necrosis of the valvular endothelium; but these areas form only a small proportion of the total valvular surface, whereas in the rabbits we have examined it has seemed as if the same kind of change had implicated a large fraction of one aspect of the valves. There is in consequence a far greater deposition of clot on the inflamed valve of the rabbit than there is in man, and this explains the occurrence of gross infarction in the rabbit, in spite of its practically complete absence from the rheumatic infection of man. The fact is that all the rheumatic phenomena of man are seen in the rabbit on a much grosser scale. Endovascular proliferation is more widespread; thrombosis of large vessels is commoner; the tracts of formative reaction are wider, so also are the superficial valvular necroses and the infarctions which

result from them; and polymorphonuclear leucocytosis is much more pronounced. These differences are differences of degree and not of quality, but they may be so great as to obscure the rheumatic nature of the histological picture. Why is this so? Why does experimental inoculation produce a grosser type of reaction?

The answer to this question is supplied by another phenomenon which is practically always visible in the rabbit lesions, but never in our experience in the human subject. In the former, vessels are seen stuffed with masses of streptococci, and the depths of the valves may contain similar masses in various stages of "pointing" to the surface. Large masses are also mingled with the intracardiac clot deposited on the surface of inflamed valves in the rabbit. This should be compared with the great difficulty with which, in our experience at least, streptococci are found in sections from human lesions. This difference may be summed up by saying that there are far more cocci in circulation in the experimental rheumatism of rabbits than in the clinical rheumatism of man And thus we are brought back to face a fundamental imperfection in our reproduction of rheumatic infection by experimental inoculation. Clinical and histological facts suggest that when a human being is infected by rheumatic streptococci, they enter the circulation from some tissue (e.g., the tonsil) where they have been lying dormant, in a thin stream which continues for several days and even for weeks. Experimental infection consists, on the other hand, in the sudden introduction of a single large mass of the micro-organisms into the circulation from outside the body altogether. In other words, there are far more cocci in circulation, so that the lesions are naturally much grosser in the rabbit than in man.

Our efforts at overcoming this difficulty (by swabbing the throat of the rabbit with cultures of the streptococci) have hitherto been unsuccessful, in that they have failed to produce any lesions whatever. Renewed efforts must be made to find out how the infective agent enters the blood-stream in man and to reproduce that mode of entry in animals. When this can be done we feel confident that experimental inoculation with the streptococcus rheumaticus will faithfully reproduce the whole clinical picture of rheumatic infection in man.

Summary.

1. Inoculation of rabbits with streptococci recovered from cases of rheumatic infection has provoked arthritis, carditis, and other lesions.

2. Histological examination of these lesions discovers (*a*) that they are identical with similar changes provoked in rabbits by inoculation with a similar micro-organism in the hands of other investigators; (*b*) that they include all the phenomena, even the submiliary nodule, found in the rheumatic lesions of man.

3. Such differences as exist between the experimental rheumatic infection and the human variety are accountable for by a difference in the mode of entry of the infective agent in the two conditions.

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AN ANALYSIS OF INJURIES TO THE BONES AT THE WRIST,

BASED ON THE RADIOGRAPHIC EXAMINATION OF 214 CASES.

BY ROBERT KNOX, M.D. EDIN., M.R.C.S. ENG.,

DIRECTOR, ELECTRICAL AND RADIOTHERAPEUTIC DEPARTMENT, CANCER HOSPITAL; HONORARY MEDICAL OFFICER IN CHARGE OF ELECTRICAL DEPARTMENT, GREAT NORTHERN CENTRAL HOSPITAL;

AND

R. W. A. SALMOND, CH.M., M.D. ABERD.,

MEDICAL OFFICER IN CHARGE OF X RAY AND ELECTRICAL DEPARTMENT, QUEEN'S HOSPITAL FOR CHILDREN; SURGEON IN CHARGE OF X RAY AND ELECTRICAL DEPARTMENT, ST. MARY'S HOSPITAL, PLAISTOW.

THIS paper is the result of a careful examination and analysis of 214 consecutive cases at a general hospital showing injury to the bones at the wrist. Each case was screened in several and radiographed in at least two directions, antero-posteriorly and laterally, many of them stereoscopically, and every one included showed definite evidence of injury, for all doubtful cases were excluded. The latter occurred chiefly with the carpal bones owing to the overlapping of shadows, which always occurs in this region. All the cases included were normal except for the injury, as any showing tubercular, syphilitic, or rheumatoid changes likely to affect the character of the injury were not included. It seems reasonable to suggest that though many cases after an injury show no bony change so far as can be detected radiographically, some of these are predisposed to become the seat of disease at a later date, thus showing the importance of treating all injuries to bones and joints with due care.

The distance of the injury above the lower ends of the radius and the ulna was measured in each case on the negative, and as the normal articular cartilage does not show in a skiagram, the measurement was taken from the middle of the lower ends of the bony structure of these bones. The bones at the wrist lying close beneath the skin against which the plate rested and the distance from the anticathode to the plate at least 18 inches, there cannot be distortion sufficient to interfere with these measurements. As to the displacement of the fragments, it must be stated that many of them had already been wholly or partially reduced and put up in splints before being X rayed, so that the results under this item are somewhat erroneous. Still, this being an event which could not be avoided, it was decided to state them with this preliminary caution. Some of the percentages do not total up to exactly 100, and the explanation of these is that there have been two separate injuries in one case.

For uniformity of results it is necessary to divide the cases into two series: (1) in which the lower epiphyses of the radius and ulna have joined their respective shafts; and (2) in which these epiphyses have not yet united. Of the 214 consecutive cases analysed, 150 belong to the former series and 64 to the latter. The first corresponds roughly with persons above the age of 20, and the second with persons below that age.

Series 1: 150 Cases where the Epiphyses have United.

(*a*) *The radius.*—This shows injury in 93 per cent. of the total number of cases. The large percentage is without doubt due to the important part the lower end of this bone takes in the mechanism of the wrist-joint. Most injuries at the wrist are carried up from the hand and are transmitted through the radius, hence the great frequency of damage to the lower end of the bone. The radius alone is injured in 41 per cent. of the total number of cases, showing that, while it is injured in nearly every case, the injury is more often distributed to some of the other bones than confined to itself.

The radius is injured along with the styloid process of the ulna in 42 per cent. of the total number of cases. This figure is interesting in showing how very frequently that process is damaged with the radius, for this is as common as an injury to the radius alone. Many of these are of the nature of so-called sprain-fractures—i.e., where a fragment (sometimes very small) of the styloid has become detached owing to tension on the internal lateral ligament. Other

alternatives are that calcification has taken place in that ligament or that there has been a separate centre of ossification for the styloid process, but these are unlikely, for in a large number of normal and diseased wrists examined we have never seen a condition at this process likely to be taken for fracture without a definite history of injury.

The radius is damaged together with the shaft and the styloid of the ulna in 3 per cent. of cases. This is therefore infrequent, and the more so as the majority of the instances are due to a fracture carried up from the damaged styloid process into the shaft of the ulna. The frequency for injuries to the radius and the shaft of the ulna is also low—namely, 3 per cent. It will be noticed how much more frequently the radius is injured with the styloid of the ulna than with the shaft, and it is interesting to compare this with the corresponding injury in the un-united epiphyses series. Injury is confined to the radius and carpus in 4 per cent. of cases.

Direction of injury.—The great majority are transverse, 67 per cent.; T-shaped in 16 per cent.; fracture from the centre of the lower end across the styloid process, 8 per cent.; V-shaped, 4 per cent.; fracture of styloid process, 3 per cent.; oblique, 2 per cent.; longitudinal, 2 per cent.; and injury at the inferior radio-ulnar articulation, about 1 per cent. Where the shafts of both forearm bones are injured the direction in the radius is transverse in all the cases examined.

Position of injury.—By far the commonest is half an inch above the lower end of the bone. It is striking that 99 per cent. of the injuries recorded are three-quarters of an inch or less from the lower end.

Displacement of fragment.—This is backward in 74 per cent., forward in 2 per cent., and there is none in 24 per cent., but the qualification previously mentioned must be kept in mind. Outward and inward rotation and displacements are not recorded as many of the cases showed rotation, chiefly outwards, but it was often difficult to decide which to include and which not.

(*b*) *The ulna.*—Some part of this is injured in 49 per cent. of the total number of cases, about one-half the frequency of the radius. Injury to the styloid process occurs in 46 per cent. of the total number of cases, so that by far the commonest injury to this bone in this series is here. It is interesting to contrast the frequencies with which the styloid processes of the ulna and radius are damaged. In the former 46 per cent. and in the latter 3 per cent. show fracture of these processes, and we think the explanation is due, partly to the styloid of the radius being structurally stronger than that of the ulna, partly because the fragment of the radius being most commonly displaced backwards and rotated outwards, the internal lateral ligament attached to the apex of the ulnar styloid is put on the stretch and must either rupture or exert tension on that process, and at the same time with the fragment of the radius rotated outwards the interarticular fibro-cartilage attached to the base of the ulnar styloid will pull on that base and help to damage it.

The shaft is injured in only 7 per cent. of the total number of cases. It is injured alone in about 1 per cent., and the styloid process alone in about 1 per cent., the latter showing that though this process is so frequently damaged it is rarely damaged alone.

Direction of injury.—There is no tendency towards any one type, nor is there any predominant type in this bone when the shafts of both forearm bones are damaged. Perhaps it is because the injury is relatively rare and a sufficient number of cases has not been examined.

Position of injury.—All are within two inches of the lower end, and so, on the whole, extend further up the shaft than in the radius. As would be expected, the majority are at the styloid process, 94 per cent.

Displacement of fragment of the shaft.—This is chiefly backwards as in the radius, though, owing to a fracture continued up from the styloid process in some of them, the frequency with no displacement is also high.

(*c*) *The carpal bones.*—Injury is present in one or more of these in 13 per cent. of the total number of cases. It proves how frequently these are damaged in wrist injuries, and probably the frequency is even greater as only undoubted cases of injury are included. The carpus without either of the forearm bones is injured in 5 per cent. of cases, the carpus and radius in 4 per cent., and in none is the carpus injured with the ulna only, showing that the ulna does not directly take part in the mechanism of the wrist-joint. The carpus, radius, and ulna are together injured in 3 per cent. of cases. The scaphoid is the one most frequently damaged, no less than 13 times out of 19. Next most common is the trapezium, while the carpal bones towards the ulnar side are less frequently involved.

(*d*) *The metacarpal bones.*—The bases of these show injury in about 1 per cent. of the total number of cases, and in both the instances observed the articulating carpal bone is also damaged.

Series 2: 64 Cases where the Epiphyses have not United.

We have thought it advisable to differentiate between the styloid process and the epiphysis of the ulna in order that a more convenient comparison with the previous series may be drawn, though we fully realise that such a distinction is not anatomically correct.

(*a*) *The radius.*—Injury is present in 89 per cent. of the total number of cases, and this is practically the same as in the former series. Damage to the shaft shows in 58 per cent. of the total number of cases, and to the epiphysis in 38 per cent. The radius alone is damaged in 40 per cent. of the total number of cases, also corresponding very closely with the former series. The shaft is injured alone in 17 per cent. and the epiphysis alone in 20 per cent.

The radius and ulna (styloid of ulna excluded) are damaged in 33 per cent. of the total number of cases, showing this to be more frequent than in the first series. The radius and styloid process of the ulna are damaged in 11 per cent., showing this, on the contrary, to be less frequent than in the other series. Injuries to the radius, ulna, and the styloid of the ulna occur in about 1 per cent. of cases. If one adds up the percentages in the two series where radius and ulna are injured together they stand at 48 and 45. This is nearly equal, but on closer analysis it is found that in the first series the damage is most commonly at the radius and styloid of the ulna, while in the second at the radius and shaft of the ulna. The explanation of this difference may be due to the mode of injury, but we also think that the ulnar styloid in the second series, being surrounded by more cartilaginous tissue acting as an elastic spring which gives when the ligaments attached to that process are put on tension, is thus less likely to be damaged. In no case is the radius damaged with the carpus alone in this series.

Direction of injury.—In the shaft by far the most frequent is transverse, 89 per cent., while the most frequent injury to the epiphysis is a separation, 79 per cent.

Position of injury.—42 per cent. are at the epiphysis, while the remainder are in the diaphysis generally about 1 inch, and practically all within 2 inches of the articular end. The site of injury is therefore higher up the shaft than in the former series, where it is confined to the lower three-quarters of an inch.

Displacement of fragment.—In the shaft 78 per cent. are backwards, 9 per cent. forwards, and 13 per cent. show none; while at the epiphysis 74 per cent. are backwards and 17 per cent. show none. The displacement in this bone in this series presents a great similarity to the other, and by far the most common is backwards.

(*b*) *The ulna.*—Injury occurs to this in 56 per cent. of the total number of cases, and this is much the same as in the former series. Analysing this, the injury is at the shaft in 36 per cent. of the total number of cases, at the epiphysis in 8 per cent., and at the styloid process in 16 per cent. Compared with the first series, it is seen how much less frequently the styloid process and much more so the shaft is damaged. The shaft alone is injured in 3 per cent., and the same figure applies to the epiphysis alone and to the styloid process alone. As before, there is no case where the ulna and carpus only are damaged.

Direction of injury.—The shaft shows 86 per cent. of transverse fractures, while the injury to the epiphysis in every case examined is a separation. Where injuries occur to the shafts of both forearm bones it is transverse in both in all the cases.

Position of injury.—This is at the styloid process in 28 per cent., at the epiphysis in 14 per cent., and the remainder, 59 per cent., in the diaphysis most commonly about one inch above the articular end. Comparing the two series, the tendency in the younger one is for the shaft and in the older one for the styloid process to be damaged.

Displacement of fragment.—In the shaft it is backward in the majority, 63 per cent., forwards in 16 per cent., and showing none in 21 per cent., while in injuries to the epiphysis there seems to be no uniformity in direction.

(*c*) *The carpal bones.*—Evidences of injury are present in only 3 per cent. of the total number of cases. This small percentage, compared to the first series, is no doubt due to the larger amount of cartilage in early life giving better protection to the bony foci in the carpus. The carpus alone is injured in about 1 per cent., and the carpus, radius, and ulna together in about 1 per cent. Of the individual bones involved, sufficient cases upon which to form an opinion have not been examined, but there seems reason for doubting that the scaphoid is as commonly injured as in the former series.

(*d*) *The metacarpal bones.*—In none of the cases do the bases of these show damage in this series.

From the foregoing analysis it is seen that the most common injury at the wrist in cases where the epiphyses have joined their shafts is a transverse fracture one half inch above the lower end of the radial bone, the lower fragment being displaced backward and with or without a fracture of the styloid process of the ulna, while in cases where the epiphyses are not yet united the commonest injury is a transverse fracture about one inch above the lower ends of both forearm bones and with both lower fragments displaced backwards.

AURICULAR FIBRILLATION.

BY CHARLES EDGAR LEA, M.D. VICT., M.R.C.P. LOND.,
MEDICAL REGISTRAR, MANCHESTER ROYAL INFIRMARY.

THE frequency of this pathological condition, constituting, as it does, one-half of the cardiac irregularities met with clinically, capable of ready recognition, and associated in many cases with definite symptoms, is sufficient warrant for the need of more definite knowledge of its main characters. It is proposed in the succeeding remarks to outline its principal features, pathological and clinical, in so far as they have at present been investigated, and to note especially the more recent work which has been done upon the subject.

Clinical Recognition.

1. *The pulse.*—It may be said at the outset that the diagnosis rests almost entirely upon the pulse, which must present three cardinal features, two of which can be ascertained without the aid of instrumental examination.

(1) Absolute irregularity of the pulse. There is no relationship between the size and strength of beats and their preceding diastolic pauses, such as one can distinguish in intermittences or extra-systoles, where the premature beats are succeeded by compensatory pauses of proportionate lengths. Large beats may succeed short diastolic pauses, or after a relatively prolonged diastolic period only a small beat may arise. Most of the well-known "irregular pulses of mitral diseases" are undoubtedly of this type. The older writers were familiar with this arrhythmia, calling it the "pulsus irregularis perpetuus."

(2) Presence of venous pulsation in the neck. The larger wave visible in the jugular region is seen to be synchronous with ventricular systole. It is most readily seen in cases associated with a pulse of rapid frequency, and, in such cases, forms a prominent feature of the case. In older patients, however, the venous pulsation is much less marked, owing, in many cases, to atrophic changes affecting the tissues in the jugular region,* and to the fact that the pulse is usually of less frequency than in the more acute cases associated with mitral valvular lesions. Occasionally the patient may be aware of the fulness in the neck, due to the venous distension, and this is more especially the case where the onset of auricular fibrillation has been of sudden onset or paroxysmal in character.

(3) Polygraphic evidence. A venous tracing in auricular fibrillation shows (a) complete absence of the normal *a* wave (due to auricular systole), which precedes, in the normal jugular tracing, the *c* wave (due to ventricular systole) by about 0·12 or 0·16 sec. (*a-c* interval); and (β) the presence of what is called the "ventricular type of venous pulse," in which one notes a characteristic "pushing forward" of the *v* wave until it assumes a position relatively nearer the *c* wave, and of a size proportionate to the degree of auricular dilatation.

2. *The symptoms.*—A pulse presenting for examination the above points may, apart from further subjective evidence, be rightly attributed to auricular fibrillation. A comparison of such an arrhythmia with one of regular rhythm denotes a marked alteration in the cardiac functional capacity. It is, therefore, unlikely that the inception of such a rhythm, which is probably, especially in the acute cases, of abrupt onset, would fail to give rise to specific symptoms directly attributable to this change, and such symptoms do occur. But in defining such symptoms one is at once faced with the difficulty that in all cases of auricular fibrillation so far observed there are always associated preceding cardiac lesions, which also give rise to their own peculiar symptoms. So that, whilst in many cases it is possible to distinguish aggravation of previous symptoms due to the altered rhythm of auricular fibrillation, a superimposed symptom-complex, there are others in which the relative values attributable to the preceding lesion and the associated fibrillation cannot with accuracy be established.

It is in mitral stenosis especially that the changes, subjective and objective, due to the inception of auricular fibrillation have been most accurately observed, and it was upon this condition that Mackenzie[10] elucidated the distinctive character of the rhythm so produced. He noted that frequently in this disease subjective symptoms became increased in intensity. Pain of anginal character, faintness, pallor, or more easily induced dyspnœa have been observed. With these severer subjective symptoms it was noted that the pulse, previously regular, and associated oftentimes with a presystolic murmur at the apex, now became irregular; that on venous tracings the wave due to auricular systole, the *a* wave, had disappeared; and that, simultaneously with these changes, the presystolic murmur was often no longer present. Altered auricular function was inferred, and, on the supposition that though the auricle may still be active its action was obscured by the larger *v* wave, it was assumed provisionally that the stimulus for auricular and ventricular contraction excited the two chambers simultaneously, and that the site at which such a stimulus arose would probably be at the junctional tissues between the auricles and ventricles—namely, the "nodal" area. Such an arrhythmia was, therefore, called "nodal rhythm." That such a line of reasoning was incorrect in the light of further knowledge will be shown later, but the fact remained that definite symptoms were observed as a result of the onset of auricular fibrillation.

All cases, however, do not present equally well-marked symptoms. More especially is this the case with auricular fibrillation in older patients with arterio- or cardio-sclerosis. In such cases, also, the pulse is often of slower frequency than in the valvular cases. In such cases, too, the arrhythmia is less frequently of paroxysmal character, and is often prolonged over longer periods, lasting for weeks or even years, and associated with symptoms of less severity.

Associated Cardiac Conditions.

A consideration of the varied lesions, cardiac and otherwise, in association with which auricular fibrillation has been observed, necessitates, for a general review of its incidence, a broad classification, and it is suggested that the cases may be conveniently arranged under three heads: (1) Auricular fibrillation associated with lesions affecting mainly the venous base of the heart (Keith)[9]—i.e., the auriculo-ventricular valves; (2) lesions of the cardio-arterio-renal system—i.e., lesions affecting the arterial base of the heart, the aorta, the arterioles, as in arterio-sclerosis, and the chronic renal conditions, especially granular kidney; and (3) other diseases. Such cases in which auricular fibrillation has been recorded, and which have come to the knowledge of the writer, comprise a total of 168 cases (Lewis,[13] 73 cases; Lea,[12] 65 cases; Hewlett,[6] 30 cases) and are tabulated as follows:—

	Lesions of venous base of heart.	Lesions of arterial base.	Other diseases.
Lewis	38 cases	14 cases	21 cases.
Lea	23 ,, ...	26 ,, ...	16 ,,
Hewlett ...	15 ,, ...	4 ,, ...	11 ,,
Total	76 cases	44 cases	48 cases.

In the first column are included all the undoubted cases of

* In patients over 60 there was absent jugular pulsation in 34·4 per cent. (Lea.[11])

mitral stenosis, uncomplicated to any great extent by associated myocardial degenerative changes. Where marked symptoms suggestive of such conditions are present these cases have been included under the third column, so that many of these cases are probably of primary valvular origin; and, similarly, in this column are included myocardial lesions associated with arterial degeneration. A consideration of the above figures will show the predominance of mitral stenosis as an exciting cause of auricular fibrillation. It shows, further, the wide range of cardiac conditions in which its presence has been observed.

Rheumatism appears to have an important etiological relationship to the incidence of auricular fibrillation, as is shown in the succeeding table:—

		Lesions of venous base of heart.	Lesions of arterial base.	Other diseases.
Lewis ...	Rh.	22 cases	2 cases	5 cases.
	No Rh.	16 ,, ...	12 ,, ...	16 ,,
Lea	Rh.	18 ,, ...	10 ,, ...	9 ,,
	No Rh.	5 ,, ...	16 ,, ...	7 ,,
Hewlett...		All cases.	Rh. 11 cases.	No Rh. 19 cases.
Total ...	Rh.	40 cases	12 cases	14 cases.
	No Rh.	21 ,, ...	28 ,, ...	23 ,,

The percentage relationship of rheumatism to auricular fibrillation, including all cases, is as follows: In mitral stenosis, 65·5; in other diseases, 31·2. Total cases, 45·1.

Proof that Pulsus Irregularis is Due to Auricular Fibrillation.

Cushny and Edmunds [1] in 1906 investigated a case of paroxysmal irregularity of the heart, the radial tracings obtained in this case being of the character recognisable as probably that of auricular fibrillation, and these writers drew attention to the close similarity of such tracings to those obtained from the carotid artery of a dog, in which the auricles were fibrillating in an experiment. In 1907 Wenckebach [25] described the presence of small undulatory waves occasionally seen in venous curves during the diastolic pauses in tracings of pulsus irregularis, especially if the pulse was slow, and only present in the ventricular form of venous pulse. Later in the same year Mackenzie [17] noted these waves and suggested that they might arise as a result of auricular fibrillation, but later in the same year abandoned the idea.[18]

With the practical introduction of Einthoven's string galvanometer for clinical investigation, electrocardiographic curves were obtained from cases of complete irregularity by Einthoven,[7] and later by Kraus (F.) and Nikolai (G.),[10] Hering (H. E.),[4] and Rothberger (G.) and Winterberg (A.).[21] The latter, by comparison of electrocardiographic curves in complete irregularity and experimental auricular fibrillation in dogs, concluded that certain cases of arrhythmia perpetua were due to auricular fibrillation. Lewis,[13] working on similar lines, showed that *all* cases of arrhythmia perpetua or complete irregularity were due to auricular fibrillation.

The fine tremors produced by the fibrillating auricle, though quite invisible in any patient without the aid of instrumental examination, and only occasionally seen in polygraphic tracings, can, in the records obtained by means of the string galvanometer, be seen in all cases when suitable leads are used. They show, during the diastolic pauses, as very fine waves occurring with an estimated frequency of about 200 or 300 oscillations per minute. That the auricle is the fibrillating structure is evidenced by the greater clearness with which such waves are seen when the leads from the string galvanometer are led from directly over the auricle (in man, over the junctions of the third and fifth right costal cartilages with the sternum) and by the analogy of tracings so obtained with those from dogs in which the auricles had been induced to fibrillate by faradic stimulation of these chambers. Such tracings further bear out in every detail the facts previously won by the polygraph—namely, the absence of a definite auricular systolic contraction and he irregularity of the ventricular contractions.†

The Causation of Auricular Fibrillation.

The exact causation of auricular fibrillation is not known. It was at one time supposed that, more especially in the paroxysmal cases, it was caused largely by central nervous influences acting through the vagus. Whilst it is likely that extracardiac influences may, in some cases, predispose to the onset of complete irregularity, as in cases where nervous excitement has been the immediate precursor,‡ the facts that, clinically, no such definite cause can be ascertained, and secondly, that experimentally auricular fibrillation can be induced in the absence of all central nervous control, suggest that the cause must be sought for mainly in the intrinsic cardiac mechanism. An abnormally irritable condition of the auricular musculature seems to be an important factor in its production. Mackenzie's [16] tracings of the regular pulse between attacks of auricular fibrillation have, in several instances, shown the presence of frequent extra-systoles of auricular origin. Lewis has also noted their occurrence in a few cases. Hewlett [5] has reported similar instances, and comments on the fact that frequently agents, such as vagus stimulation, poisoning with calcium salts or physostigmin, which induce auricular fibrillation, may also cause a succession of auricular extra-systoles. The same writer has reported a case in which he notes the combination of; (1) isolated auricular extra-systoles; (2) numerous and irregular auricular extra-systoles or a coarse form of auricular fibrillation; and (3) fine auricular fibrillations which produce few, if any, venous waves.

Pathological investigation of the heart has, as yet, yielded no information of definite value. Radasewsky [20] examined several cases of gross irregularity of the heart, and found widespread fibrosis of the heart, the damage being most extensive in the auricles. Mackenzie,[16] Schönberg,[22] Lewis [13] in similar investigations show that in most cases there are evidences of chronic inflammatory changes in the cardiac musculature, affecting auricles or ventricles, or both. In Schönberg's five cases he found in all a chronic inflammatory (lymphocytic) infiltration of the tissues at the junction of superior cava and auricle. Lewis [13] states: "It is possible that fibrosis, by interfering with the circulation in restricted areas of the musculature, sets up a state of irritability. The tendency for anæmia of the muscle to bring about a new impulse formation is readily demonstrated experimentally. Ligation of a branch of a coronary artery is usually followed by the appearance of extra-systoles. But it is difficult to suppose a constant state of anæmia in the affected tissues, and an anæmia of long duration. It must also be remembered that extensive fibrosis may occur without irregularity." Increased intra-auricular pressure has been suggested as a predisposing cause, and it has often been noted that extra-systoles are more frequent in such cases. Paroxysms of fibrillation have, in a few instances, been induced by pressure applied over the abdomen (Lewis), but auricular fibrillation can also occur in cases where no rise of pressure has been present. The prolonged paroxysms of auricular fibrillation are probably explained by the fact, experimentally observed, that auricular fibrillation itself tends to increase the irritability of the auricle, and so sets up a vicious circle.

The Heart in Auricular Fibrillation.

If the heart of a dog is examined when auricular fibrillation is experimentally produced by faradic stimulation of its musculature the auricle is seen to become "ballooned," and over its surface, which assumes a more dusky colour, fine fibrillary tremors are seen. They are of even intensity over the whole surface, and both auricles are equally affected. Such movements, however, are not present in the ventricles, which contract normally but with an irregular rhythm. The ventricular systole is not impaired. In electro-cardiographic curves, indeed, the ventricular waves, R and T, are, in many cases, of increased amplitude.

The relation of auricular to ventricular contraction seems to be as follows. The *a.-v.* bundle conducts from the auricle to the ventricle irregular impulses owing to its nodal or auricular end receiving such impulses from the turbulent-acting auricle. It is obvious, therefore, that if the conductivity of this bundle be impaired fewer impulses would reach the ventricle, and the result would be a slowing of its frequency, though its irregularity would be unaffected. The effect of heart-block (impaired *a.-v.* conductivity) in this condition has been carefully investigated. The beneficial effect of digitalis upon cases of auricular fibrillation has long

† For fuller details of the interpretations of the electrocardiographic tracings obtained in such cases, the reader is referred to Lewis, Auricular Fibrillation and its Relation to Clinical Irregularity of the Heart, 1910, vol. i., pp. 306-372.

‡ Hornung [8] reports a case where onset of paroxysms occurred after the act of defæcation.

been recognised. It is well known that this drug acts upon the *a.-v.* tissues both directly and probably also through the vagus (Cushny[2]) lessening conductivity. There is, therefore, some evidence that the beneficial effect of digitalis is due to partial cutting off of auricular impulses. Mackenzie has observed that such effect is most marked when the bundle has been previously damaged; it is in mitral cases especially that the beneficial effect of digitalis is most evident; and it is in these cases that impaired conductivity is often present, as evidenced by a prolongation of the *a.-v.* interval. If the heart-block is complete the auricle may continue its fibrillation, but no impulses will reach the ventricle, which will assume its idiopathic slow rhythm of frequency about 40 per minute. Such cases have been reported,[15] and these features were well observed. Experimentally also Fredericq[3] has, by section of the bundle whilst the auricles were fibrillating, produced the same condition.

Associated Functional Conditions.

1. Auricular fibrillation and heart-block. The association of these two functional conditions has already been referred to in the previous section. Heart-block may be found in association with auricular fibrillation: (1) as a result of the administration of digitalis; (2) due to lesion of the bundle, pathologically or experimentally produced.

2. Auricular fibrillation and paroxysmal tachycardia. Clinically, some cases of auricular fibrillation, especially where its onset is abrupt and associated with a rapid rhythm, may present a strong similarity to true paroxysmal tachycardia. There is a certain class of case in which the functional mechanism in the two conditions is rather a matter of difference in degree than in kind. Hornung[8] and others have reported cases in which auricular fibrillation passed directly into paroxysmal tachycardia, and *vice versâ*. The chief distinction, however, rests in the fact that in the latter condition the pulse, though rapid, is regular. It is known that the auricle can be excited to contract (1) by the normal sinal stimulation; (2) by any excitable focus in its musculature other than the sinus; or (3) by retrograde ventricular stimulation—i.e., by a stimulus conducted "backwards" through the *a.-v.* bundle (*v.-a*). When the ventricle is contracting at a very rapid rate, as, experimentally, it may be induced to do, such contractions may become retrograde to the auricle. In such cases the auricle is receiving impulses from two sources: (1) the normal sinus stimulation; and (2) the retrograde ventricular stimuli. The auricle may then respond by fibrillation. So that one has here auricular fibrillation and ventricular tachycardia. The stimulus for the auricle to be induced to fibrillate in a *normal* auricle must be very great. A case has been reported in which it was shown that the auricle was excited from two separate intra-auricular foci, but responded, not by fibrillation, but by tachycardia.[19]

3. Auricular fibrillation and extra-systole. Whilst the association of auricular extra-systoles has already been noted, ventricular extra-systoles may also be observed. Mackenzie has noted their presence in the regular pulse between fibrillation attacks. It is obvious, however, that their presence in an irregular pulse is difficult to detect. In certain cases where digitalis has been given it has produced a form of pulsus bigeminus, but one in which the diastolic pauses succeeding the second of the coupled beats are of variable length. It has been shown, however, that the second of the coupled beats is a ventricular extra-systole, and that its presence is rendered thus evident by the slowing of the rhythm, whereby the ventricle is enabled to accumulate its own excitable material and so produce its ectopic beat, and the slow rhythm allows of its presence being rendered visible. Ventricular extra-systoles were also observed in the case above alluded to of auricular fibrillation and heart-block (Lewis).

Treatment of Auricular Fibrillation.

Treatment may be directed either to the removal of the cause or, failing that, to the alleviation of the symptoms produced thereby.

Specific treatment.—In the particular functional disorder we are dealing with the cause is only conjectural. Auricular hyperexcitability is provisionally suggested as the direct incentive to fibrillation of its musculature. Neither is the *causa causans* known, though it has been noted that both gross and microscopical examination have shown in the auricle inflammatory and structural change. In a few cases it is possible that nervous influences have been an important factor. So far, no drug has been discovered that has any effect in either preventing or checking fibrillation. Not even digitalis, which has so potent an effect in lessening the severity of the associated symptoms, has any effect in this direction. Complete cessation of fibrillation may occur independently of any known cause, and the same may be said of its onset.

Symptomatic treatment.—The marked alleviation of symptoms following the exhibition of digitalis in many of these cases is the most hopeful point about this condition. Its good effect in heart disease has, of course, long been known. Wenckebach[26] has expressed the opinion that it is likely that the administration of this drug in all conditions of cardiac disease is advantageous, and this is probably the routine treatment carried out by many practitioners, though it is certain that there are some cases, notably where the *a.-v.* conductivity is itself the cause of the disease, as in heart-block, in which this drug may do harm. It is in the rheumatic cases of auricular fibrillation that digitalis acts the best. Its effect is due to the slowing of the pulse, which is caused by the checking of many of the irregular auricular impulses in the *a.-v.* bundle, so that the ventricle receives fewer stimuli. This effect upon the *a.-v.* bundle is produced by the action of the drug upon the vagus and directly on the *a.-v.* tissues. But digitalis has further effects in this condition. Wenckebach notes: (1) lessened excitability of the cardiac muscle, as evidenced clinically by the disappearance of extra-systoles when the drug is given in small doses; (2) strengthening of the beat due to the direct action on the muscle; (3) an increased irregularity of the pulse; though it is slowed, there is a greater variation in the size and spacing of the ventricular beats. The same observer has also noted that this drug will produce a somewhat similar arrhythmia if given when the pulse is regular. This action is due to the vagus. In many cases of fibrillation, especially when associated with arterio-sclerosis or chronic renal disease, digitalis appears to have no effect. This has been noted by Mackenzie, and Windle[27] in a series of 11 cases states that, whilst there was at first some improvement in the condition, this was not maintained.

Administration of digitalis.—Mackenzie is in favour of giving fairly large doses if smaller ones do not cause response, and points out that the toxic effects of this drug are not dangerous, the first ill-effects being usually nausea or headache. After the heart is fully under the influence of the drug smaller doses suffice to maintain the improvement, such doses being regulated by the general condition and the character of the pulse. The tincture of digitalis is the most convenient preparation to use. Where the effect of administration is desired to be carefully observed Hewlett[6] has suggested the intravenous injection of 1 mgm. of strophanthus. The effect of its action can be seen within a few minutes in the resting patient. Other drugs of the digitalis series have been less thoroughly investigated. They are probably more variable in their action. Turnbull[23] has recorded, as a result of the administration of squills, sinus arrhythmia, partial heart-block, and another arrhythmia of uncertain character. Other drugs and the treatment for all the various associated symptoms it is not proposed to discuss.

In conclusion, it is hoped that a sufficiently clear account has been given of an important clinical condition and of the present state of our knowledge concerning its main functional and pathological characters.

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Manchester.

A CASE OF AURICULAR FIBRILLATION AND PREGNANCY.

BY CHARLES H. MILLER, M.D. CANTAB., M.R.C.P. LOND.,
ASSISTANT PHYSICIAN, BROMPTON HOSPITAL, ETC.

THE patient, a married woman, aged 34 years, was admitted into the London Hospital under the care of Dr. James Mackenzie on Jan. 18th, 1911. As to the previous history, she had had rheumatic fever three times and chorea on three other occasions. The heart was said to have been damaged in early life. She had been in the London Hospital on three occasions for heart failure, during one of which she gave birth to a full-term child. On all occasions it was noted that the pulse was continuously and completely irregular. She had had four children, the oldest being seven years and the youngest one year old. The following are the notes of the case:—

Jan. 18th: Patient is a small, thin woman. She complained of difficulty in breathing and cough. Condition: Orthopnœa, malar flush, frequent cough, abundant sputum. Respirations 28; pulse 89, irregular in force and intervals. General bronchitis, slight œdema, and ascites. Heart: Diastolic thrill; apex beat in sixth space 5 in. from mid sternal line; first sound sharp at the apex, second sound heard. A murmur was heard in diastole which seemed to run up to the first sound when the action was rapid, but stopped short of it in the longer pauses. Tracings of the radial pulse showed complete irregularity. She was given a simple linctus and propped up in bed.

Jan. 20th: Cough and breathlessness still troublesome. Pulse 94; respirations 34. Urine 64 oz. in 24 hours; specific gravity 1025; no albumin. Pain under the right ribs and an attack of vomiting. 22nd: Sudden attack of prostration, during which she was almost pulseless. There were pain and tenderness at the heart's apex. Pulse 90; respirations 36. She was given tinct. digitalis ℥ x. four hourly—i.e., 1 drachm a day—until the 27th. 23rd: Breathing distressed and laboured. Pulse 88; urine 46 oz. 24th: Pulse 88; urine 40 oz. 25th: Much easier and able to lie lower. Pulse 70: urine 30 oz. Tracing of radial pulse showed complete irregularity. 26th: Cough now only troublesome at night. Breathing easier and without effort. Pulse 78; apex beat in sixth space, 4½ in. from mid-sternal line. The diastolic murmur was distinct and of diminishing intensity.

Jan. 27th: Two attacks of flatulence and vomiting; pulse 66. Apex beat in sixth space 4½ in. from mid-sternal line; apex impulse more forcible and first sound louder, otherwise no change in auscultation signs. Complete irregularity in radial tracing. Digitalis stopped after 4½ drachms taken. 28th: Comfortable; pulse 74. Apex beat in sixth space 4½ in. from mid-sternal line. Diastolic murmur clearly of diminuendo character. 30th: Comfortable; pulse 70. Tumour noted rising out of the pelvis. Heart signs as before; radial tracing as before; the jugular tracing shows the *v* wave but not the *a* wave.

Feb. 1st: Comfortable. Apex beat in sixth space 4½ in. from mid-sternal line. First sound loud, systolic murmur, double second followed by diastolic murmur with an interval of silence before the first sound. Urine 30 oz. 3rd: Comfortable; can lie flat; pulse 70. Heart signs unchanged. Radial and apex tracings show complete irregularity. No *a* wave in jugular tracing. 6th: Up in a chair one hour. Pulse 70 before getting up, 81 while up, 76 after being in bed one hour. Urine 32 oz. Pelvic tumour larger. 7th: Pulse 74 before being up, 76 after. 8th: Pulse 80 before being up, 92 after. Urine 42 oz. Complete irregularity of radial and apex tracings. Jugular tracing showed a 2-peaked plateau, the first peak being the *c* wave.

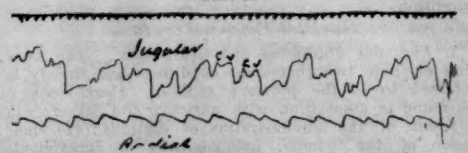
Feb. 9th–24th: Condition remained the same. Towards the end the bronchitis became worse, and there was œdema of the bases. No digitalis had been given for 26 days, and the condition was satisfactory for 24 days. Thus on this occasion she was better after 2¼ days at 1 drachm a day; 4½ drachms caused vomiting; the effect lasted fully 24 days. The pulse was slowed, the apex beat came in a little, the bronchitis cleared up, the urine was unchanged. Tincture of digitalis 1 drachm a day was started again on the 24th. 25th: Breathing difficult; more pillows necessary; pulse 100-105. Cardiac dulness 1½ in. to right, 5½ in. to left of mid-sternal line. Bronchitis and œdema of bases. 27th: More comfortable. Pulse 70; cough troublesome. Able to lie down. Urine 62 oz. on the 26th, 90 oz. on the 27th, 50 oz. on the 28th.

March 2nd: Easier; coughing less; pulse 68. No dulness to right of sternum. 6th: Pulse 66; urine 33 oz. Heart sounds: first loud, systolic murmur, second sound not heard, diastolic murmur distinct and stopping before first sound. Digitalis reduced to half a drachm of the tincture in the day. 8th: Comfortable, but headache, and vomited after dinner. Pulse 48: urine 44 oz. Digitalis was stopped after 11 drachms of the tincture had been taken. 10–20th: Comfortable; pulse 70–80: urine average 48 oz. Urine decreased on the 19th to 26 oz. and on the 20th to 14 oz. Tincture of digitalis 1 drachm a day renewed on the 20th. 22nd: Comfortable; pulse 88; urine 94 oz. on the 21st, 56 oz. on the 22nd. The pulse gradually slowed to 58 on the 29th. She vomited three times on the 27th and 28th. 29th: Digitalis stopped; pulse 58.

April 1st: Pulse 48; comfortable. 3rd: Pulse 54. Abdominal tumour is now midway between ensiform and umbilicus. 5th: Comfortable; pulse 62. Fibrillation waves seen in jugular tracing. 8th: Pulse 87. There was a slight "show" in the morning followed by loss of water and a little blood. Tincture of digitalis 1 drachm a day was renewed.

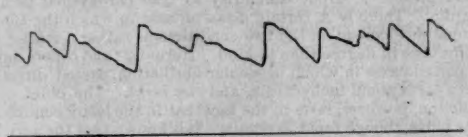
April 9th: "Show" in morning followed by one labour pain at 2 P.M. and another at 7 P.M. Short pains continued until 9 P.M., when the os uteri admitted two fingers. The cough was troublesome, but she dozed from 10 P.M. to 6 A.M. 10th: At 6 A.M. a severe pain brought the head into sight. Child born 6.11; placenta passed 6.25. Little blood was lost in the birth. The lochia were scanty and the after-pains slight. At the time of the birth she had had 1½ drachms of the tincture of digitalis. 10.30 A.M.: Comfortable; lying low in bed; very drowsy; pulse 90; cough and bronchitis. 1.30 P.M.: Drowsy; pulse 80. 4 P.M.: Pulse 73. Child weighed 3¼ lb. 11th: Comfortable; slept well; pulse 62. 13th: Comfortable; pulse 62; digitalis reduced to half doses. 20th: No complications; digitalis stopped after 8¼ drachms had been taken.

FIG. 1.



Simultaneous tracing of the jugular and radial pulse, showing a continuous irregularity, and a venous pulse of the ventricular form.

FIG. 2.



Tracing of the radial pulse, showing the disorderly rhythm characteristic of auricular fibrillation.

From April 20th onwards there were no untoward symptoms. The patient left the hospital in good condition and has remained under observation since. She is periodically given digitalis. Without it she remains comfortable for about a week. It is found that half a drachm of the tincture in the day is enough to keep her at her best. Whenever she has been without it for a few days the cough and bronchitis become worse. These are always the first symptoms of failure with her, and are relieved but not banished by digitalis. The baby thrived in hospital, but after discharge had several illnesses and died at the age of 10 months.

Comment.—There are practically no records of patients with auricular fibrillation passing through the pregnant state. In this case it is certain that the patient has gone successfully through pregnancy once with auricular fibrillation, and it is highly probable that she had been through it once before.

The interesting features of this case may be briefly reviewed. All through her stay in hospital she suffered from a cough, and rhonchi were audible all over the chest. Whenever digitalis was stopped basal crepitations appeared, pointing to œdema of the bases, and they persisted until digitalis had been given for some days, and even throughout the administration of the drug on some occasions. But they only disappeared while digitalis was being taken. Whenever the patient began to feel a little worse the pulmonary symptoms and signs were the first to be noticed. Her failure then first manifested itself in the lungs.

It was noted in one of her earlier visits to hospital that she had an intolerance to digitalis. This occurred while she was taking a mixture of the tincture and infusion. In the present case nausea and vomiting were induced on several occasions after taking digitalis, but she became more tolerant of the drug, and on one occasion took 11 drachms of the tincture before she felt sick. The effect of digitalis on her was very constant. The pulse was slowed at the end of 24 hours and the slowing continued, the rate remaining between 70 and 80 for a variable number of days. When it was about 50 she began to feel the effects, and if it was not stopped vomiting would occur.

On several occasions when the heart was beginning to fail

it could be definitely ascertained that the amount of urine was decreasing. But on some occasions there was no appreciable decrease. On the other hand, with the administration of digitalis the amount increased, sometimes to as much as 90 ounces. The great increase was at the beginning of the administration. Afterwards the amount would be 35 to 60 ounces. The variation in the quantity of urine cannot be considered as definitely proved as the pulse-rate under digitalis in this case. On looking through her old notes, it was noticed that the daily amount fluctuated greatly from 15 ounces to 60 when digitalis was not being given. Too much stress, then, should not be laid on the diuretic effect of digitalis in this case.

In this patient the effect of digitalis was to slow the pulse, to improve the pulmonary condition, and sometimes to promote diuresis. It was fortunate that she gave warning of her impending delivery 36 hours beforehand. At the time the pulse was increasing in rate. Digitalis was given, and the child was born after the full effect of the drug was established. She is now living her usual life, doing some of her housework and looking after her children. She understands how dependent she is on digitalis, and takes care to present herself regularly at the hospital for observation and treatment.

It was thought that this case was worthy of record as the condition is of great importance. The subject of pregnancy and heart disease presents many problems for solution, and it is only by a careful compilation of all recorded cases that we can solve these problems and obtain knowledge of a practical value for our guidance.

Queen Anne-street, W.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Precocious Development.—Exhibition of Clinical Cases and Specimens.

A MEETING of this section was held on Oct. 25th, Mr. A. H. TUBBY, the President, being in the chair.

Dr. E. C. WILLIAMS read a short paper on a case of Precocious Development in a boy aged 6 years. Six months prior to his admission into hospital, on May 9th, 1911, his parents had noticed that his development was abnormal. On admission the weight was 4 st. 2 lb., his height 4 ft. 2 in., he had a slight moustache, and the voice was deep like an adult's. He was slow of intellect and in movement. Hair was abundant over the pubes; no axillary hair. External genitals fully developed. No bronzing of the skin. Heart and lungs were normal. No abdominal tumour could be felt. The pulse varied from 72 to 88 per minute. Blood pressure 110 mm. Hg. Ocular fundi healthy. The boy remained in hospital five weeks, during which time he put on 11 lb. The child was seen again on Oct. 15th; weight 5 st. 5 lb. 5 oz., height 4 ft. 4½ in. There was evidence of rapid growth, but no evidence of any increase in sexual development. No tumour could be felt. He was in excellent health.

Dr. EDMUND CAUTLEY showed a case of Tetanoid Spasms. The child was born on Sept. 4th last. Since ten days of age he had had attacks of rigidity about every half hour. The mouth was said to be clenched, the neck rigid, but the head not retracted, and the hands clenched. He took food with difficulty and regurgitated some through the nose. During the attacks the whole of the upper half of the body became rigid, especially the neck muscles, and the head slightly retracted, the eyes were closed and the mouth could be opened very little. The fontanelle did not bulge. The hands were flexed at the wrist and the fingers and thumbs hyper-extended, but not assuming the position of tetany. The toes were hyper-extended. Since admission the attacks had become less frequent and less severe.

Dr. CAUTLEY also showed a girl, aged 3 years and 7 months, with Amnesic Aphasia. It had followed an acute illness which was either encephalitis or serous apoplexy.

Dr. J. PORTER PARKINSON showed a case of Congenital Syphilis and Hæmaturia. The patient was a girl aged 8 years. Wassermann reaction was strongly positive. The urine was reduced in quantity; specific gravity 1020, much blood, and a small amount of albumin. Microscopically no casts were seen, only blood cells and a few epithelial cells. The case was shown to elicit opinions as to whether the hæmaturia was due to syphilis. Dr. Parkinson thought it was not.

Dr. F. J. POYNTON showed a case of Congenital Family Cholæmia. The girl, aged 8½ years, had been admitted for an exacerbation of jaundice, from which she had suffered since birth. The father and one sister were jaundiced also. A sister had died at four months with jaundice and convulsions. The urine occasionally contained urobilin, but never bile pigment. The spleen was palpable. The blood serum was free from urobilin or bile pigment. Wassermann's test was negative. Fragility of the corpuscles was on four separate occasions 0·6, 0·65, 0·65, and 0·65.

Dr. C. R. BOX also showed a case of Congenital Family Cholæmia. Excision of the spleen had been done with benefit.

Mr. P. MAYNARD HEATH showed a case of Genu Valgum due to rarefaction and deformity of the shaft of the femur.

Dr. REGINALD MILLER showed a case of Cerebral Maldevelopment (? Sclerosis), with Infantilism and Idiocy. The patient was a boy, aged 8½ years, born at full term by instrumental labour; first child. Appeared normal at birth but did not develop properly; grasped nothing in fingers until 3½ years old. Teeth erupted from twelfth month to third year, but rapidly decayed and most were extracted when 4 years old. Height, 35 inches; weight 22¼ lb.; circumference of head, 17½ in. Face senile in appearance from falling in of mouth. Testicles partially undescended, left small. Could not walk or talk; never cried. Feet had a tendency to cross; hands and fingers hyper-extended; tremor of lips and hands. Dirty in habits, very destructive. By retching efforts brought food up into mouth, and unless controlled produced vomiting by forcing fingers down his throat; the amount of this vomiting daily was considerable. Wassermann test, negative. Skiagrams by Dr. Harrison Orton showed long bones small, but otherwise normal. Mandible small and senile in type; only five teeth of second dentition visible unerupted.

Mr. DUNCAN C. L. FITZWILLIAMS showed a case of Coxa Vara. The patient was a boy, aged 7 years. Had limped ever since starting to walk, and the right leg was said to always have been shorter than its fellow. The apparent shortening was about four inches, the real shortening fully an inch. The condition was extremely like a congenital dislocation of the hip, for the whole of the right limb was smaller than the left; this was especially well seen in the feet. The X ray showed an extreme degree of coxa vara, probably congenital in origin. An attempt to place the limb in an abducted position after sub-trochanteric division of the bone had only been partially successful.

Mr. T. H. KELLOCK showed a case of Traumatic Pancreatic Cyst after Operation. The patient, a girl, aged 11 years, was knocked down by a horse in March, 1912, and said she was kicked by the horse in the abdomen. She was admitted to hospital almost immediately afterwards, somewhat collapsed and complaining of pain and tenderness in the left hypochondrium. The case was taken to be one of slight rupture of the spleen. Nothing was done surgically, the child gradually improved, and was sent to a convalescent home about a fortnight later, there being still a little increased resistance to palpation in the left hypochondrium. She remained at the convalescent home for three weeks, and then returned to her home and attended school apparently quite well. With a number of other children she was, one day, examined by the school medical officer, who found she had an abdominal tumour; of this the child was unaware. She was readmitted to hospital on Sept. 14th, 1912, apparently in perfectly good health; a tumour was visible as she lay on her back or stood up, occupying the left hypochondrium; it was tense, fluctuating, fixed, and not tender on manipulation; it extended to the right beyond the middle line of the body; was resonant above, but quite dull on percussion. Resonance could be obtained behind it in the left lumbar region. The temperature was normal, and there were no abnormal constituents in the urine. A few days after admission an incision was made through the upper part of

the left rectus muscle into the abdomen and the cyst exposed. It was found to be retroperitoneal, pushing the stomach upwards and the transverse colon downwards. A trocar and cannula were inserted, and 50 oz. of greenish, opalescent fluid escaped; it was alkaline, and on examination proved to be pancreatic. The edges of the opening into the cyst were sutured to the abdominal wall and a large drainage-tube inserted, the edges of the abdominal wound being closed round this; a long tube was added to the drainage-tube leading into a bottle by the side of the bed. Only 3 oz. of fluid escaped by the tube into the bottle, and as none appeared to be collecting in the cyst the tube was shortened on the fourth day, and removed altogether two days later, when the opening rapidly closed, the rest of the wound having healed by first intention.

Mr. SYDNEY STEPHENSON showed a case of Ocular Torticollis. The child, aged 9½ years, had carried her head on one side since she was 12 months of age, and the condition had not become worse since then. She had had no illness other than measles at 2 years of age. She belonged to a family of nine children, of whom one died from pneumonia at 3 years, one was mentally unsound, and a third suffered from "rheumatism and a bad heart." In the child's habitual attitude the head was inclined towards the right shoulder, forming an angle of about 30° with the vertical. It could be straightened instantly at the child's will. There was no tension on the sternomastoid muscle, no twisting of the head, and no asymmetry of the face, points in which the condition offered an instructive contrast with cases of ordinary torticollis. There was no obvious deformity of the skull. The spinal column was slightly inclined to the right in the dorsal region, and to the left in the lumbar region. The condition showed the usual accompaniments of a right dorsal curve. With the head in the abnormal position the right eye was often free from squint, but at other times it was inclined downwards for from 8° to 10° (strabismus deorsum vergens). But as soon as the head was straightened the other (left) eye deviated upwards to a corresponding amount (strabismus sursum vergens). The investigation of double images was rendered untrustworthy by the nervousness of the child, but, as far as could be made out, when the head was tilted there was usually no diplopia, and when it was straightened double images were seen. Apart from the squint the eyes were healthy.

Mr. PHILIP TURNER showed a case of Lateral Sinus Thrombosis which had recovered after operation. It was that of a boy aged 14.

Dr. T. R. WHIPHAM showed a girl, aged 7, who presented Atrophy of the Muscles of the Forearms, more marked in the flexors than the extensors. The hands were small and there was wasting of the muscles of the thenar and hypothenar eminences. The interossei were also affected. The case was one of either anterior poliomyelitis or myopathy.

Dr. ALEXANDER MORISON exhibited a specimen showing a Deficient Foramen Ovale Septum, and Dr. EDMUND CAUTLEY a Tuberculous Right Kidney from a child aged 12 months. It was in an unusually advanced stage of the disease.

ERRATUM.—In a report of the proceedings at the Medical Section of the Royal Society of Medicine, published last week (p. 1150), a reference was made to a paper by Dr. Frederick Taylor as having appeared in the *Guy's Hospital Gazette*. The proper reference, we learn from Dr. Taylor, is the *Guy's Hospital Reports*, Vol. XLII., 1883-84, p. 391.

HUNTERIAN SOCIETY.

Presidential Address on Recent Work and the Application of Physiological Investigation to Surgery.—Apparatus for the Intravenous Administration of Anæsthetics.—Paraldehyde as an Intravenous Anæsthetic.—Intravenous Hedonal.

A MEETING of this society was held on Oct. 23rd, Mr. A. H. TUBBY, the President, being in the chair.

The PRESIDENT thanked the Fellows for the honour conferred upon him, and stated how proud he was to follow in the footsteps of so many distinguished men who all had testified to the intuitive genius of the great John Hunter, and to his scarcely less distinguished brother William Hunter. It had been said that the surgeon had abolished sepsis and the anæsthetist had triumphed over pain, but shock still remained as the great barrier to perfect success. According to Crile and Mummery shock was due to exhaustion of the vasomotor centre in the medulla. In shock the smaller arteries dilated, especially those of the abdominal area, and not enough blood was sent to the vasomotor centre in the medulla. The great causes of shock were: (1) interference, bruising, cutting, and crushing of the nerves; and (2) exposure of and handling and dragging on the abdominal viscera. It had been shown that the intestines remained paralytic for three hours even if only touched. He then discussed the remedies for the avoidance and relief of shock. He explained how it was essential to maintain, if possible, the proper proportion of CO_2 in the body. Above all, excessive struggling during the early stages of anæsthesia was to be avoided. The position of the anæsthetist was therefore a difficult one. His rôle consisted in avoiding loss of CO_2 on the one hand, and on the other of getting the patient asphyxiated with too much. Loss of CO_2 might be avoided by preventing spasm during inhalation. Loss of CO_2 might be made good by injection of saline solution saturated with CO_2. Another application of the relation of physiology to surgery was in the extraordinary diminution in the mortality from peritonitis after operation in recent years. Murphy had shown that the peritoneal region had various powers of absorption. This power was greatest in the region of the diaphragm, and least in the pelvis. For this reason the patient should, after abdominal operations, be kept sitting up. Another question was how to get rid of fluids in the pelvis. The most valuable method of accomplishing this was by the injection of saline fluid into the rectum—in fact, this was the sheet anchor of treatment after abdominal operations. The third great bugbear of abdominal surgery was intestinal paralysis. In this connexion salicylate of eserine was a very valuable drug; pituitrin could also be used as an injection. The last point was the avoidance of the use of opium; calomel (preferably in small doses) should be administered until the bowels acted.

Mr. E. G. SCHLESINGER said that the intravenous method of giving anæsthetic drugs had a very definite but limited application. Too great attention need not be given to the temperature at which the intravenous ether solution was used, providing only that it never exceeded 99°, at which temperature the ether evaporated. A 5 per cent. solution of ether in normal saline was used, and this was mixed cold. The advantages claimed for ether over hedonal were that the patient came round very rapidly; that ether was excreted by the lungs and caused much less bleeding. No vomiting occurred with this method, and thrombosis, if it occurred, was due to faulty technique. The apparatus used and the technique of the administration had been described in the *Guy's Hospital Gazette* of May 25th, 1912.

Dr. H. S. SOUTTAR showed an Apparatus for the Intravenous Administration of Anæsthetics. This consisted of two Woulfe's bottles, a rubber pressure bulb, and a heating chamber. By means of the pressure bulb the fluid was driven out of the bottles through the heating chamber, the two streams then entering a common mixing bulb of glass by separate jets. In the heating chamber the fluid passed through separate coils of pure tin surrounded by water. The temperature of the water was kept at 100° F. by a wire of resistance carrying a current from a cautery circuit. The mixing bulb prevented reflux flow from one bottle to the other, acted as an air trap, and allowed the rate of flow to be observed. The two bottles allowed two different fluids to be combined in any proportions. In an alternative arrangement the bottle stood surrounded by hot water, and the coils hung surrounded by water in a thermos flask. The injection was made through an ordinary hypodermic needle.

Mr. H. L. C. NOEL spoke on the Use of Paraldehyde as an Intravenous Anæsthetic. He said that, starting at first with extremely small doses, 4 c.c. of the pure drug were injected into the median basilic vein. Almost before the syringe was empty the patient was unconscious. He slept naturally for about two hours. Subsequently 8 c.c. were injected with satisfactory results. It was found, however, that the pure drug caused a certain amount of local discomfort and coughing, and it was therefore diluted with saline to form a 10 per cent. solution. 100 c.c. of this solution produced in about 40 seconds an anæsthesia lasting about 20 minutes, and suitable for minor surgical procedures. Paraldehyde, whilst

acting temporarily as an anæsthetic, had a prolonged hypnotic effect, considerably reducing the amount of ether subsequently required. Being volatile it was rapidly excreted by the lungs, an important element in the safety of the drug, and an advantage which could not be claimed for hedonal.

Mr. C. M. PAGE, speaking on the induction of general anæsthesia by means of the Intravenous Infusion of Hedonal, outlined the conclusions derived from his experience during the past year. At St. Thomas's Hospital the method described in his original paper[1] was still employed. As to the dangers of the method several fatalities recorded were, in his opinion, due to an overdose of the drug; there should usually be some reaction on the part of the patient to the skin incision. If this was expected and allowed for, there was usually no further trouble. Local thrombosis occurred in rather a large number of cases in the summer; this, he thought, was due to putting the solution in the tank at a temperature of 120° F.; since a solution at 105° or 110° had been used he had not noticed the complication. Cases which in general seemed unsuited to the method were those of acute lung disease, general arterio-sclerosis, or cases where the heart was not sound. The method had proved most useful in cerebral and spinal cases, and in cases of intra-abdominal hæmorrhage. In extensive cellulitis of the neck a light anæsthesia in which the deep reflexes were not abolished could very readily be obtained.

Dr. J. F. W. SILK was of opinion that the demonstration of the possibility of producing narcosis by the intravenous method was one of the most notable advances that had been made in the department of anæsthetics for many years. But what was possible was not always expedient, and he was glad to find that the previous speakers had recognised that this method had its limitations. He thought that Mr. Page's summary of the cases suitable or unsuitable for hedonal was a good one, and applied equally to ether. The method, too, was complicated, and involved the presence of an assistant to the anæsthetist, which militated against its routine adoption. The novelty of the apparatus shown that evening seemed to consist mainly in the means adopted to warm the inflowing stream of fluid. He thought that this point had been rather over-elaborated. He agreed with Mr. Page that many of the fatalities recorded against hedonal were the result of overdosage. The strength of the solution originally recommended was 0·75 per cent., which worked out at something over 65 grains to the pint. This he considered too strong a dose.

Mr. H. E. G. BOYLE said that the long period of unconsciousness which seemed to follow the anæsthesia could not, he thought, be altogether a desirable effect. Although there were certain cases in which the pain after the operation was considerable, there were, on the other hand, many operations in which the after pain was but slight, and he could not see that it was advantageous to have these patients unconscious for several hours after the operation. These unconscious patients would require very careful watching until they regained their conscious state, and this alone entailed added responsibility and possibly danger. Mr. Boyle criticised the so-called advantages of hedonal and ether infusion anæsthesia over inhalation anæsthesia for large operations about and in the mouth. He claimed that in a mouth case, when sponging the throat was necessary to preserve a patent air way, the anæsthetist was the man to do it—he knew when there was danger to his patient from blood or other matter getting into the larynx, and sponged it away. The surgeon or his assistant did not usually do this; they were frequently too engrossed in their difficult task to bother about the anæsthetist and his troubles. In ether infusion, if the anæsthetist was to be attending to his infusion, who was to look after the patient's larynx? Some years ago Sir Henry Butlin taught them the value of performing a preliminary laryngotomy and packing the pharynx when doing major operations in the mouth. To Butlin's laryngotomy tube Mr. Boyle had added an extension tube, and with this in position the anæsthetist was removed from the field of operation and could devote his attention entirely to the anæsthetic. He pointed out the danger, whenever a new method was advanced, of enthusiasts being found who would advise it for everything. He did not believe that either of these substances was the perfect agent, although each of them was useful in certain cases.

[1] THE LANCET, May 11th, 1912, p. 1258.

Mr. ASHLEY S. DALY agreed with Dr. Silk and Mr. Boyle that it was inadvisable to use this method in jaw, mouth, and throat cases. Except in cases of lung disease or those needing saline solution, he did not think that the infusion method offered any great advantage over the inhalation method, especially over open ether preceded by morphine and atropine, which was the safest and most satisfactory anæsthetic, applicable to almost any case, and giving rise to few unpleasant or dangerous after-effects.

LIVERPOOL MEDICAL INSTITUTION.

Hebosteotomy.—Lacrymation.—Intracranial Tuberculosis in Adults.

A MEETING of this society was held on Oct. 24th, Dr. C. J. MACALISTER, Vice-President, being in the chair.

Dr. A. J. WALLACE read a note on four cases in which he had performed Hebosteotomy. Two cases were done by the open method six years ago and had not impressed him favourably, but two recent cases done by the subcutaneous method had given good results, a live child being secured in both cases of 7 lb. in weight in one case and of 8 lb. in the other. One mother recovered and left the hospital in 24 days; the other in 17 days. Dr. Wallace illustrated his note by lantern slides, showing the anatomy of the parts concerned, the technique of the operation, and the results obtained. He thought the operation useful in the minor degrees of contraction where the passages were fully dilated and the child alive. On the continent the operation had been performed indiscriminately and had had very bad results. Statistics were quoted from various authorities.

Mr. A. A. BRADBURNE read a note on Lacrymation, in which he gave a sketch of the nerve mechanism, and related cases where alteration in the secretion was due to general causes. He protested against the use of dilating probes in cases of overflow of tears.

Dr. G. A. CRACE-CALVERT read a paper on Intracranial Tuberculosis in Adults. The paper was based on seven cases, chiefly meningeal. The condition had occurred in males not over 50 years of age and mostly between 30 and 45 years. It was always secondary to tuberculous disease elsewhere, especially in the lungs. It had been suggested that the condition was due to the use of tuberculin, but Dr. Crace-Calvert believed it had occurred most in cases where tuberculin had not been used. As one explanation of the preponderance of male over female cases, he suggested that men worried more over being ill and were more anxious and irritable than women. The symptoms of the disease were insidious and obscure, and a non-acute type of onset was common. Headache was the most common symptom. Fever was sometimes absent; vomiting was not common and was a late symptom. Constipation was marked, but was possibly due to opiates. Optic neuritis was absent in four out of the seven cases. Kernig's sign was not always present. The pulse was in some cases quick and irregular, but in other cases slow and of high tension. The respiration, slow and shallow to begin with, might become of the Cheyne-Stokes type. In some cases there was retraction of the head. Coma might occur for several days; the patient apparently got well for a time, the coma coming on again and being fatal even after a month's intermission of symptoms. Diagnosis depended on the severe persistent headache in a subject showing evidence of tuberculosis, especially when accompanied by optic neuritis, Kernig's sign, and mental derangement. Lumbar puncture showed increased quantity of secretion, turbid or clear, an excess of lymphocytes, and in 80 per cent. tubercle bacilli were found. The result was invariably fatal in adults in from nine days to seven weeks. The treatment was symptomatic, morphia being found to give most relief to the intense pain. Lumbar puncture gave temporary relief. The local reaction following tuberculin produced more pain; so far no good results had followed.—In the discussion that followed Dr. MACALISTER said he had seen relief from the use of wet cupping over the parietal protuberances and in children recovery after the use of mercurial inunction.—Dr. W. PERMEWAN questioned the justifiability of the use of tuberculin, as it seemed to him that intracranial tuberculosis was so frequent where that remedy had been used.—Dr. J. HILL ABRAM thought lumbar puncture was not needed for diagnosis, and he disapproved of its use if a general

anæsthetic were required, as the psychical disturbance had a bad effect on the patient and the method frequently gave no positive result. He quoted a case of intracranial tuberculosis that had apparently been cured by tuberculin.—Dr. J. LLOYD ROBERTS spoke of temporary aphasia as an early symptom in these conditions; he had seen three cases.—Dr. R. J. M. BUCHANAN described the method of using tuberculin at the Kennington Dispensary, where the lobing of leucocytes was taken as the indication for the dosage.—Dr. N. PERCY MARSH had found among children that lumbar puncture gave no result, the relief of symptoms being only very transitory; tuberculin had proved of no use.—Dr. T. R. GLYNN, Dr. W. B. WARRINGTON, Dr. W. D. WILKINS, Dr. E. FAIRFIELD THOMAS, and Dr. C. RUNDLE also took part in the discussion, and Dr. CRACE-CALVERT replied.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A combined meeting of this society and the Nottingham division of the British Medical Association was held on Oct. 23rd, the President, Mr. W. G. Laws, in the chair.—In his address on Word-Blindness and Allied Conditions Mr. R. W. Doyne gave a sketch of the difference between visual acuity and sight. He pointed out that sight was a very complex phenomenon, and he traced out how a small inverted image on the retina was communicated to the highest centres of the brain. Here, in the centre of visual memory situated in the left cortex of the angular gyrus, a record of the image was established. When this centre was defective the patient was said to be suffering from "word-blindness"—e.g., a child could see the letter "A," but could not recognise it as such. Such defects are caused by hæmorrhages, patches of softening, pathological conditions, and congenital deficiencies. In minor degrees this is not a very rare condition, and occurs more frequently in boys. The children are always difficult to teach; when reading is eventually acquired, the difficulty is masked, although the child always reads slowly, and often prefers to learn its lesson by reading aloud, and so committing the lesson to memory by means of its auditory centre. In other respects these children are generally highly developed and are quick and have good memories. Sometimes the difficulty exists only with regard to letters, and not to numbers or musical figures. As regards treatment, these children are better taught by women than men; they should be taught to educate their visual memory of the word as a whole by means of reading boxes. The lecturer then dealt with the teaching of the brain as a whole, and lamented the present system of education by cramming. He pointed out that the winner of scholarships was in other respects a dull boy, and possessed only a second-class brain. The owner of a first-class brain possessed far more judgment and discrimination.

THE annual dinner of the Royal Navy Medical Club will be held at Princes' Restaurant, Piccadilly, on Nov. 9th, at 8 P.M.

SIR HENRY CRAIK ON THE MEDICAL CLAUSES OF THE NATIONAL INSURANCE ACT.—Sir Henry Craik, M.P., was the guest of the East Lancashire Graduates of the University of Aberdeen at Blackburn on Oct. 25th, and in the course of a speech said that there was no parallel to the political position in which the author of a measure had been so far out of his calculations as to require to ask for an additional grant of £1,650,000 a year (which meant a capital of £50,000,000) upon which the House of Commons had never been consulted. The latest offer would require careful consideration from medical men. New duties were to be laid on the medical profession. The profession would do its duty as in the past, but did not intend to become statistical clerks. The payment for scientific skill should not be affected by the cost of drugs—their price being subject to commercial conditions—which it was entirely out of the power of the medical practitioner to affect. The essential vice of the Act was that it attempted to lower all classes of insured persons to the lowest class, and to make them merely recipients of something like charitable medical relief.

Reviews and Notices of Books.

Dictionary of National Biography. Edited by Sir SIDNEY LEE. Second Supplement. Vol. I., Abbey-Eyre. London: Smith, Elder, and Co. 1912. Pp. 694. Price 15*s*.

THE original issue of this valuable work of reference consisted of 63 quarterly volumes the last of which was published in the middle of the year 1900, and in the course of the following year there came out a First Supplement in three volumes, bringing the record down to Jan. 22nd, 1901, the day of Queen Victoria's death. The Second Supplement, which will be completed in three volumes during the current year, will furnish biographies of noteworthy persons who died between Jan. 22nd, 1901, and Dec. 31st, 1911.

Among the 500 names contained in the present volume the most notable is that of his late Majesty King Edward VII., who was born in London at Buckingham Palace on Nov. 9th, 1841, and died there on May 6th, 1910. The leading characteristic of the biography is its frankness and evident impartiality, no attempt being made to disguise the facts that when Prince of Wales he was now and then blamed for sharing too much in the frivolous amusements of so-called society people, and that after his accession to the throne he had some political disappointments, while this is counterbalanced by the subsequent remark: "Probably no King won so effectually the goodwill of foreign peoples and of his own subjects. He was a citizen of the world, gifted with abounding humanity which evoked a universal sympathy and regard." On the subject of his well-known anxiety for the improvement of the public health and his esteem for the medical profession the biography states:—

"The ardour and energy with which at the end of the nineteenth century the problems of disease were pursued caught his alert attention, and he gave many proofs of his care for medical research. He regularly performed the duties of President of St. Bartholomew's Hospital and learned much of hospital management there and elsewhere. He did what he could to encourage the study of consumption, and the investigation of cancer interested him. When he laid the foundation-stone of the new wing of Brompton Consumption Hospital in 1881, he asked if the disease were preventable, why it was not prevented. On Dec. 21st, 1888 [an obvious blunder for 1898], he called a meeting at Marlborough House to found the National Society for the Prevention of Consumption. ..... He was always on good terms with doctors. Through his friendship with Sir Joseph Fayrer, who had accompanied him to India, he was offered and accepted the unusual compliment of being made Honorary Fellow of the Royal College of Physicians on July 19th, 1897."

This last sentence might have been supplemented with a clause to the effect that in 1900 he was also made Honorary Fellow of the Royal College of Surgeons of England. Elsewhere in the article appropriate references are made to his serious illness from enteric fever in 1871, to the postponement of the Coronation in the summer of 1902 on account of his attack of perityphlitis, and to his inauguration in 1897 of the Prince of Wales's Hospital Fund for London, which on his accession to the throne was renamed King Edward VII. Hospital Fund.

Passing now to the medical biographies, one of the first in alphabetical order is that of Sir Thomas McCall Anderson, professor of practice of medicine in the University of Glasgow. The son of a medical man in Glasgow, where he was born in 1836, he studied medicine at the university there, and in 1858 graduated M.D. with honours. After two years spent in further medical study in Paris, Berlin, and Vienna he became one of the physicians to the Glasgow Royal Infirmary and a lecturer in the extra-mural school known as the Andersonian Institute. In 1861 a hospital for diseases

of the skin was founded at Glasgow; he was one of the first two physicians, but his colleague died in 1865, and for 47 years Anderson bore the main share of the duty. In 1900 he succeeded Sir William Tennant Gairdner in the chair of practice of medicine in the University. He was the author of several monographs and text-books. In 1903 he was appointed university representative on the General Medical Council, was knighted in 1905, and died in January, 1908. Thomas Annandale, the son of a medical practitioner in Newcastle-on-Tyne, studied medicine at the University of Edinburgh, and graduated as M.D. in 1860 with the highest honours, receiving the gold medal for his thesis "On the Injuries and Diseases of the Hip-joint." In 1863 he was admitted F.R.C.S. Edin.; in 1871 he began to lecture on clinical surgery at the Edinburgh Royal Infirmary; and in 1877 he became professor of clinical surgery in the University, succeeding Lord Lister, who then migrated to King's College, London. He died in December, 1907. Henry Ashby, both of whose parents were members of the Society of Friends, was born at Carshalton, Surrey, in 1846. He received his medical education at Guy's Hospital, and graduated as M.D. in 1878 with a gold medal in the University of London. After holding appointments in Liverpool he removed in 1878 to Manchester to become physician in the Manchester Hospital for Diseases of Children (known as Pendlebury Hospital), and was from 1880 until his death in July, 1908, lecturer on diseases of children, first in the Owens College and then in the Victoria University. From 1904 he was special medical adviser to the Manchester committee for the education of feeble-minded children. Lombe Atthill was born in county Fermanagh in 1827, and in 1849 graduated as M.B. of Dublin University, taking the M.D. degree in 1865. In 1851 he was made assistant physician to the Rotunda Hospital, Dublin, and in 1868 joined the staff of the Adelaide Hospital in the same city, where he was given charge of a ward for the treatment of diseases peculiar to women, the first appointment of the kind in any Dublin hospital. He was one of the earliest operators to perform ovariotomy in Ireland with a good result, his first two cases being successful. In 1875 he was elected master of the Rotunda Hospital, where he introduced Listerian principles and practically drove puerperal sepsis from the wards. He acted as president of several professional bodies, including the Dublin Obstetrical Society, the Royal Academy of Medicine in Ireland, and the Irish College of Physicians, being also representative of the College on the General Medical Council from 1889 to 1903. He died in 1910.

William Mitchell Banks was born at Edinburgh in 1842, studied medicine at the university of that city, and in 1864 graduated as M.D. with honours, and gained the gold medal for his thesis on the Wolffian bodies. He settled at Liverpool in 1868 and joined the staff of the infirmary school of medicine, first as demonstrator, and afterwards as lecturer on anatomy, retaining the latter post, with the title of professor, when the infirmary school was merged in University College; he was also full surgeon at the Liverpool Royal Infirmary from 1877 to 1902. He was the first representative of the Victoria University on the General Medical Council, and in 1899 he was knighted. He died suddenly at Aix-la-Chapelle in 1904. He deserves recognition alike as the surgeon to whose advocacy the modern operation for removal of cancer of the breast is largely due; and as one of the organisers who raised the medical school of Liverpool from a low ebb to the rank of the medical faculty of a modern university.

Robert Barnes, born at Norwich in 1817, received his medical training first as an apprentice in Norwich and subsequently in London at University College and St. George's Hospital. After becoming M.R.C.S. Eng. in 1842 he settled in general practice in Notting Hill and engaged in literary work on THE LANCET. He graduated as M.D. Lond. in 1848 and was admitted F.R.C.P. Lond. in 1859. From 1863 to 1875 he held the position of obstetric physician firstly to the London Hospital and secondly to St. Thomas's Hospital; in 1875 he left St. Thomas's Hospital to become obstetric physician at St. George's Hospital, where he was elected consulting obstetric physician in 1885. He took a prominent part in founding the Obstetrical Society of London in 1858, and was president in 1865–66, but a dispute with the council of this society led him in 1884 to establish the British Gynæcological Society, of which he was honorary president until his death in May, 1907. Lionel Smith Beale, the son of a London surgeon, was born in 1828, received his medical education at King's College, London, and graduated as M.B. Lond. in 1851. At King's College he held three successive professorships—namely, that of physiology and general and morbid anatomy from 1853 to 1869, pathological anatomy from 1869 to 1876, and medicine from 1876 to 1896. He was also honorary physician to King's College Hospital. He was admitted F.R.C.P. Lond. in 1859, and F.R.S. in 1865. Beale was one of the most brilliant of English microscopists, who not only introduced new methods of microscopic research, but also showed the value of the microscope to diagnosis in clinical medicine, and published several valuable treatises on these subjects. In 1879–80 he was president of the Microscopical Society. He died in March, 1906. Elizabeth Blackwell, the first woman admitted to the British Medical Register, was born at Bristol in 1821. In 1832 the family emigrated to the United States of America, where Elizabeth and her two sisters became school teachers. While in this work Elizabeth studied medicine privately, and in 1847, after having been refused admission at various schools, she was allowed to enter the medical class at a small university town, Geneva, in Western New York State, where she graduated as M.D. in January, 1849. In the following April she came to England and was allowed to gain practical experience in St. Bartholomew's Hospital. In 1850 she went back to America, but in 1858 she returned to England, and her name was placed upon the British Medical Register on Jan. 1st, 1859. At the London School of Medicine for Women, opened in 1875, she accepted the chair of gynæcology. She died at Hastings in May, 1910, being then in her ninetieth year. She delivered many lectures and addresses and her published writings were numerous. George Fielding Blandford, son of a medical practitioner at Blandford in Wiltshire, was born there in 1829. He studied medicine at St. George's Hospital, London, and graduated as M.B. Oxon. in 1857 and M.D. in 1867. From 1865 to 1902 he was lecturer on psychological medicine at St. George's Hospital; he also had a large practice in connexion with cases of lunacy, was visiting physician to various asylums, and principal proprietor of one at Fulham. In 1877 he was President of the Medico-Psychological Association of Great Britain and Ireland. He died in August, 1911. Sir Rubert William Boyce was born in London in 1863, received his medical training at University College there, and graduated as M.B. Lond. in 1889. In 1894 he was appointed to the newly endowed chair of pathology in University College, Liverpool, and about four years later, in conjunction with Sir Alfred Jones, he founded the Liverpool School of Tropical Medicine. In 1902 he was elected F.R.S., and in 1906 he was knighted. He died in June, 1911. John Henry Bridges was born in Suffolk in 1832, became a Fellow of Oriel College, Oxford, in 1855, afterwards took up the study of medicine, and graduated as M.B. Oxon. in 1859. From 1870 to 1898 he was a metropolitan medical inspector to the Local Government

Board, and in that capacity his advice was often serviceable to metropolitan Poor-law medical officers. He died in 1906. In the literary and philosophical world he was well known as a translator of the works of Auguste Comte, as a prominent positivist, and as editor of an edition of Roger Bacon's "Opus Majus." Sir William Henry Broadbent was born near Huddersfield in 1835, studied medicine in Manchester, graduated as M.B. Lond. in 1858 and M.D. in 1860, and was in the latter year appointed lecturer on physiology and pathology in St. Mary's Hospital. He remained on the active staff of this hospital until 1896, being also physician to the London Fever Hospital from 1860 until 1879. In 1892 he was appointed physician-in-ordinary to King Edward VII., then Prince of Wales, and in 1896 physician-extraordinary to Queen Victoria. He was created a baronet in 1893, and died in July, 1907. Sir John Burdon-Sanderson was born near Newcastle-on-Tyne in 1828, studied medicine at the University of Edinburgh, and graduated there as M.D. in 1851, with the gold medal for his thesis. Between 1853 and 1860 he received various hospital and other appointments in London, all of which, as well as his private practice, he had by 1870 given up in order to devote himself exclusively to scientific research. In 1871 he became professor of practical physiology and histology at University College, London; in 1882 Waynflete professor of physiology at the University of Oxford; and in 1895 was transferred to the professorship of medicine there. In physiology he was an acknowledged master in his own somewhat recondite branch of experimental research. In 1899 he was created a baronet. He died in November, 1905. William Henry Corfield was born at Shrewsbury in 1843, studied medicine at University College, London, and graduated as M.B. Oxon. in 1868, and M.D. in 1872. In 1869 he was appointed professor of hygiene and public health at University College, London, and opened the first laboratory in London for the practical teaching of hygiene. He was a pioneer in house sanitation and among the first to enunciate the true principles of a healthy home. He held many important positions and published several valuable works. He died in August, 1903.

Sahli's Tuberculin Treatment, including a Discussion of the Nature and Action of Tuberculin and of Immunity to Tuberculosis. By Dr. HERMANN SAHLI, Professor of Medicine in the University of Berne; Director of the Medical Clinic. Translated from the third German edition by WILFRED B. CHRISTOPHERSON, with an Introductory Note by EGBERT C. MORLAND, M.B., B.Sc. Lond., M.D. Berne. London: John Bale, Sons, and Danielsson, Limited. 1912. Pp. 198. Price 7*s.* 6*d.* net.

WE are evidently in a period of tuberculin renaissance. This is the third book on the same subject which has appeared quite recently. We have had occasion lately to review a book on tuberculin in which ambulant treatment by relatively large doses was advocated (Wilkinson), and soon afterwards another one (Rivière and Morland) discussing tuberculin treatment in a broader, more objective manner. This new work, by one of the foremost clinicians on the continent, again presents tuberculin treatment from a subjective point of view.

Professor Sahli continues, as he did first in 1906, to recommend small doses, so chosen as to avoid observable reactions (not febrile reactions only). Out of the great number of tuberculins one only (Béraneck's) is favoured by him, although he admits that all the tuberculins contain immunising substances. His theoretical considerations, which occupy the larger part of the book (116 pages), are exceedingly interesting, and, coming from an excellent clinical observer, deserve close attention. The technical details of his method will have to be studied in the original; they offer no insurmountable difficulties, and if conscientiously adhered to, avoid the dangers attributed to tuberculin. Based on his results, the author asserts that tuberculin can safely and with great benefit be administered by the general practitioner, and that it is destined also to play a great prophylactic rôle, similar to that of vaccination. He most insistently cautions against large doses. The apparently favourable effects obtained with them, particularly the suppression of fever, are explained as a consequence of a general "overloading with toxin," with baneful ultimate results.

It is to be noted that Professor Sahli has tried several new methods of tuberculin application. He says that "surprising success" has been obtained in surgical tuberculosis by intrafocal injections. Potent local reactions controllable by proper dosage are thereby produced. On the other hand, he describes various attempts at producing innocuous local inflammation by means of external applications of tuberculin. These are meant to exert general immunising effect without producing sharp focal reactions, especially dangerous in the lungs. The various methods tried were abandoned as too troublesome for the patient. It seems, however, that Professor Sahli has pursued this course, since he has recommended at Rome a "specific-derivative treatment" by means of multiple cutaneous inoculations of tuberculin, not mentioned in this book. These various attempts rather give the impression that the author is not altogether satisfied with his older method, and we actually find him admitting that "the ideal, at present a very long way off, lies in exactly the opposite direction"—viz., the stimulation of the immunising anti-actions of the organism by substances of little or no toxicity. In view of this a recommendation so all-embracing and far-reaching as is uttered in other parts of the book would seem somewhat premature.

The translation is well done, and the book throughout shows evidences of excellent editorship. Head-lines, different types, and index allow ready orientation, more difficult in the original German and in the French edition. The book certainly recommends itself as a very important contribution to this subject.

Die Hygiene der Juden. Edited by Dr. MAX GRUNWALD. By many Authors. 1912. With appendices. Verlag der Historischen Abteilung der Internationalen Hygiene-Ausstellung, Dresden, 1911. Pp. 325.

SHAKESPEARE was pleased to typify the Jew, Shylock, as a bloodsucker for the purpose of a great drama, unmindful of what history has to teach concerning the humanity of a race which through generations of oppression and centuries of maligning has furnished a conspicuous and regular example of human kindness.

Dr. Grunwald's book is a collection of essays, all based on established records and ascertainable facts, which deal with the hygienic significance of the Mosaic law, with the religious basis of the care of bodies, regarded by the Hebrew as a sacred gift of the Almighty, and with the social-economical measures which the ancient Jews adopted to foster a pure family life, to safeguard the individual from the cruel ravages of poverty, to combat disease, to breed humility, and to banish unemployment. Carmen Sylva, the Queen of Roumania, speaks of the greatness of the Jewish race in these respects, and points out that the Jews are the only race which has not experienced degeneration. The mortality among the Jews, as far as can be learned from statistics, has always been, and still is, considerably lower than that among other races or nations. The reason for this is subjected to careful analysis, and the facts are weighed with fairness and circumspection. But not only must the main fact of the preservation of life be regarded as a characteristic of Judaism; other considerations

single out the Jews of old as a wonderful people. The reader of this book has the opportunity of divorcing the religious aspects of the Mosaic law and the teaching of the Talmud and the more modern Schulchan Arukh from the scientific and political, and of ascertaining what measures were adopted to secure the race from racial degeneration. Considerable difficulty may be experienced when an attempt is made to estimate the value of a law apart from its relation to the religion. In the instance of the observation of the Sabbath, for example, men of all creeds and those of no creed at all will agree that the advantage of one day of rest in seven can scarcely be over-rated. Professor Sudhoff, however, points out that this idea belongs to Babylonian culture, and that the Jews adopted it from the Babylonians. Dr. Grunwald does not agree with this view.

Any work compiled by many authors must lack symmetry, but on the whole the manner of presentation of the subject is high, and many chapters offer interesting and often absorbing reading.

Theorie und Praxis der inneren Medizin. Ein Lehrbuch für Studierende und Aerzte. Von Dr. ERICH KINDBORG in Bonn. Zweiter Band. *Die Stoffwechselstörungen. Die Krankheiten des Bewegungsapparates und der Verdauungsorgane.* Mit 74 Abbildungen. Berlin: S. Karger. 1912. Pp. 634. Price 10 marks.

IN our review of the first volume of Dr. Kindborg's text-book on medicine we indicated the general scheme upon which it is constructed—viz., that it affords such details in regard to the ancillary sciences as may be necessary for a thorough grasp of the problems of the pathology, diagnosis, and treatment of disease. The present volume follows upon the lines of its predecessor. It deals first with disturbances of metabolism, with special reference to the disorders of protein, carbohydrate and fat metabolism in the body. Organs yielding internal secretions are next considered in relation to their influence on metabolism, and the results of their disease or disordered function are described. Diseases of the skeletal system, of joints, and of muscles are next dealt with. The remainder of the book is devoted to a full consideration of the diseases and disorders of the digestive organs. In all cases the account of the disease is prefaced by such anatomical and physiological information as may be necessary, and chemical and pharmacological details are also given in the text in order to explain the pathology and treatment of the disease. As in the first volume, Dr. Kindborg has been successful in his choice of what to insert and what to omit, so that his account of any given disease is always concise, interesting, and instructive. His arrangement and classification of the subject matter are always clear and definite.

We make no attempt to give a detailed review of the contents. We may mention the description given of diabetes as being full and instructive, while obesity and gout are also dealt with in interesting and practical fashion. In connexion with diseases of the skeletal system and joints, rickets and gonorrhœal synovitis receive careful consideration, and a brief account of affections of the joints in tuberculosis is given, but the subject of acute rheumatism is somewhat cursorily dismissed, although its treatment is discussed in detail. Arthritis deformans and the other chronic joint affections also receive less consideration than their frequency and importance would seem to demand. Diseases of muscles, on the other hand, are fully dealt with. Diseases of the digestive system occupy more than half the book. In connexion with diseases of the pharynx a full description of diphtheria is included. Its bacteriology is discussed, and the treatment by antitoxin is described in detail. A table is given showing the comparative strength of the various forms of antitoxin available in Germany. Diseases of the stomach are described in great detail, and the various special methods of diagnosis and treatment are clearly and fully outlined. The classification and description of the forms of intestinal obstruction are clear and valuable. The account given of the symptoms, diagnosis, and treatment of appendicitis is also worthy of mention. Dr. Kindborg is an advocate of early operation, and states that appendicitis is practically an "ileus in miniature," and therefore requires practically the treatment of ileus. Under the heading of diseases of the liver we may refer to his description of cirrhosis, which is interesting and concise.

Dr. Kindborg's book is well arranged, well printed and produced, and fully bears out the promise of the first volume. It constitutes a valuable and instructive text-book on medicine, the more so that the subject of treatment is fully discussed and explained.

Orthopædic Surgery. By EDWARD H. BRADFORD, M.D., Surgeon to the Boston Children's Hospital; and ROBERT W. LOVETT, M.D., Associate Surgeon to the Boston Children's Hospital, &c. London: Baillière, Tindall, and Cox. 1912. Pp. 410. Price 14*s.* net.

ALTHOUGH there is little general agreement as to the exact limits of orthopædic surgery, it cannot be denied that this department has proved itself worthy of special consideration. The book begins with an account of the tuberculosis of joints, first as a whole and then of each in turn. The deformities of rickets are next considered. Lateral curvature of the spine is well described; then come various paralytic and spastic deformities, and lastly the varieties of talipes are described.

The chief characteristic of the book is its practical nature. The authors have in other works written fully on orthopædics, but here they have restrained themselves for the sake of brevity; they have stated the received opinion on the various affections, and they have omitted the statement and discussion of other views. There is much to be said for this course; the book is intended for students and for those practitioners who wish to revive and revise their knowledge of the subject. For those who are studying a subject for the first time a certain degree of dogmatic teaching is desirable, while those who consult a text-book for particular guidance generally desire a definite answer to their doubts. The description of the treatment is good, and it is in most cases sufficient to enable the reader to carry out the procedure if necessary, though this does not apply to all the operations. The numerous illustrations deserve favourable mention.

Charakter und Nervösität. Vorlesungen über Wesen des Charakters und der Nervösität und über die Verhütung der Nervösität. Von Dr. JENÖ KOLLARITS, Privat-dozent Adjunkt der II. med. Universitäts-Klinik in Budapest. Mit 3 Text-figuren. Berlin: Julius Springer. 1912. Pp. 244. Price, paper, 7 marks; bound, 8.40 marks.

THE thesis which Dr. Kollarits supports with considerable ingenuity in this series of lectures is that nervousness is not a disease, properly so called, but a hereditary peculiarity of character which is, to a certain extent, normal, and only when it has reached a greater degree can it be described as an inherited anomaly. It is in no sense of the word a sign of degeneration. The endeavour is also made to show that character in general is the expression of certain physico-chemical dispositions, and that in the case of man character and nervousness are the exteriorisation of certain inherited physico-chemical properties of the nervous system. It should be noted that under the term "nervousness" the author with due deliberation includes neurasthenia, hysteria, paranoia, mania, melancholia, and manic-depressive insanity,

and we cannot avoid feeling that thereby he has rendered his task unnecessarily difficult. There are few, we think, who will subscribe whole-heartedly to the author's opinions. Clearly the matter of nomenclature is, in this connexion, of paramount importance. Dr. Kollarits defines disease as abnormal vital phenomena of exogenous origin; a hereditary anomaly is an abnormal phenomenon of endogenous origin; and hereditary degeneration is constituted by the combination of hereditary anomalies with structural defects. It is not easy, we are convinced, to carry this proposed division through the whole of pathology, mental and physical, although Dr. Kollarits makes the attempt in a consistent, if somewhat arbitrary, fashion.

One of the most interesting of the lectures is devoted to the eternal problem of the nature of the vital processes. The definition of Le Dantec is cited with approval, almost with enthusiasm, that "Life is a chemical reaction," and it is elaborated by such statements as that there is no fundamental distinction between organic and inorganic life, that instead of using these epithets to characterise two forms of life we should speak rather of "the life of unorganised matter" or "the life of organised matter" as the case may be, for all life exists on a chemico-physical basis. While there are abundant references to more or less familiar facts and experiments, reading the argument again only serves to show how barren the land really is, and where so much remains pure hypothesis, dogmatising, as the author here gives the impression of doing, is undesirable.

These lectures are the product of a cultured and well-read mind, and they will repay the reader who has the patience to go through them with sympathy and attention, for the remark may be made, by way of criticism, that they have to some extent the faults of diffuseness, repetition, and unnecessary detail. It takes some 17 pages for the author to decide whether nervousness is a disease or not, and his subject is not really reached till well on in the book.

Oral Surgery: a Text-book on General Surgery and Medicine as Applied to Dentistry. By STEWART L. MCCURDY. With 228 illustrations. New York: D. Appleton and Co. 1912. Pp. 469. Price 12*s.* 6*d.* net.

THIS is the first of a series of text-books which have been planned with a view of covering the entire subject of dentistry, and it is proposed that each book should include only such subjects as properly belong to it.

This volume is divided into two distinct parts—general surgery and oral surgery. About one-quarter of the book is devoted to the first part, and it is, we assume, intended as an introduction to the special study of diseases of the oral cavity. It is well written and forms an admirable survey of the principles of surgery. The section on "Oral Surgery" is all that can be desired, and contains sufficient information to allow the dental student to obtain a trustworthy acquaintance with the surgery of this special region. There are many subjects considered which are perhaps not purely surgical, such as the varieties of stomatitis, reflex neuroses from the teeth, &c., but this only goes to enhance the value of the book. The author's reference to mal-development of the teeth will not tend to bring home to the student's mind a clear idea of the difference between the so-called "hypoplastic" tooth and the tooth characteristic of congenital syphilis.

There is, however, an excellent account of syphilis as it affects the mouth, and the author lays particular stress on the liability of the operator to infection. The lesson he no doubt wishes to convey is that many of the cases of infection in the course of dental work are due to the non-recognition of syphilitic lesions in the mouth. In dealing with fractures of the mandible the author does not seem to favour the Hammond splint, stating that "this method is not satisfactory when there is much tendency to redisplacement." That is true; but there are many cases where the splint is of extreme value, and when it is properly applied in a suitable case most satisfactory results follow. The secret of the success of the splint lies in attention to the technique of manufacture and adjustment. The student, however, will not obtain much help from the account given by the author, which is as follows: "Hammond throws a wire about all of the teeth, including the molars on both sides, passing along the lingual as well as the buccal surfaces of the teeth. Additional wires of much smaller gauge are thrown about and between the teeth on either side of the fracture."

The book is of a convenient shape, the type is clear, the printing good, and the illustrations are admirable. For reading by holding in the hand the book seems to us a little heavy.

The Treatment of the Diseases of the Skin. By W. KNOWSLEY SIBLEY, M.A., M.D., B.C. Cantab., M.R.C.P. Lond., M.R.C.S. Eng., Physician to St. John's Hospital for Diseases of the Skin. London: Edward Arnold. 1912. Pp. 280. Price 5*s.* net.

WITHIN recent years many new methods of treatment of the diseases of the skin have been introduced, and as a result the treatment of many of these affections has been revolutionised. Electrolysis, the X rays, cataphoresis, and currents of high frequency are some of the most striking of these new therapeutic agents; but many others are also of importance, such as radium and carbonic acid snow. Dr. Knowsley Sibley has included in his little work on the treatment of the diseases of the skin all these new methods of treatment, though naturally space has not permitted a detailed description of the manner of employing them. Enough, however, is said to enable the reader to understand the general principles of treatment. The various diseases of the skin are then taken in alphabetical order and the best methods of dealing with each disease are described. Finally, a list of useful prescriptions is appended.

The book strikes us as well suited for the purpose of enabling the reader to see within a small compass the most modern means of dealing with each skin affection. It is not, and it is not intended to be, a treatise on the diseases of the skin, for little is said of etiology or diagnosis, but we consider that the author has succeeded in what his title promises.

Handbuch der Vergleichenden Physiologie. Herausgegeben von HANS WINTERSTEIN. Drei und zwanzigste Lieferung. Band I.: *Physiologie der Körpersäfte.* Erste Hälfte. Bogen 21–29. Jena: G. Fischer. 1912. Pp. 321–460. Price 5 marks.

THE whole of this Heft, by Filippo Bottazzi, is occupied by cytoplasm and the body juices. Rather less than 31 pages are devoted to the literature of the subject, which may give the reader some idea of the work already done and to be done on what at first sight seems a simple subject. The subjects of osmotic pressure in cells, plasmolytic methods, and the work of Pfeffer and others, are duly set forth. The question of turgor and its regulation in unicellular organisms is next considered. Then the juices of plants are dealt with as regards their chemical composition, their osmotic pressures, and electrical conductivity. The whole text is interspersed with an enormous number of elaborate tables the lessons of which it is impossible to condense in any review. The secretions and inner fluids of plants are then dealt with. The so-called "water glands" are specially considered, and so is the secretion called nectar; then the milky juices (latex

in different plants, such as ficus—an interesting and practical chapter. Animal juices and animal cells and tissues are next considered, first of marine, aquatic invertebrates, and then of fresh water animals, and, finally, of land animals. All these juices are considered in their physical and chemical relations, and again we have a great array of tables setting forth freezing points, osmotic pressures, electrical conductivity, and so forth.

The entire Heft is a mine of information, and Professor Bottazzi deserves thanks for the painstaking manner in which he has collected, mustered, and tabulated such a mass of facts relative to the properties of the juices of plants and animals.

LIBRARY TABLE.

Studies from the Rockefeller Institute for Medical Research. Vol. XV. Reprints.—While we only refer to a few of the 48 articles contained in this volume, it may be said that all are of value and deserving of close attention. The studies include a wide variety of subjects—pharmacological, therapeutical, bacteriological, biological, pathological, and physiological. The most practical paper is perhaps that by Dr. Alexis Carrel, on the Technique and Remote Results of Vascular Anastomosis, reprinted from *Surgery, Gynæcology, and Obstetrics*. The general rules that he gives for operations on blood-vessels have been adopted to eliminate the complications which may especially occur after suture of vessels—namely, stenosis, hæmorrhage, and thrombosis. A rigid asepsis is absolutely essential in operations upon blood-vessels, and Dr. Carrel finds that the degree of asepsis under which general surgical operations can safely be done is insufficient for success in an operation for the anastomosis of vessels. Thrombosis is liable to follow slight injuries of the wall of the vessel, and even the desiccation of the endothelium may lead to the formation of a clot. During the operation the walls of the vessels must be kept wet with Ringer's solution or covered with vaseline. It is necessary to resect or remove the external sheath from the edges of the vessels, for if during the suture it gets between the edges of the vessels or around the silk threads it very quickly causes a deposit of fibrin which may lead to an obliterative thrombus. By washing the vessel carefully with Ringer's solution and coating it and the surrounding parts of the operation field with vaseline, the endothelium can be efficiently protected against coagulating blood and the juices of tissues. Vaseline also prevents the fingers of the operators and the threads from being soiled by fibrin ferment. The occurrence of stenosis at the place of anastomosis is prevented by performing the suture while the wall of the vessel is under tension. The technique is described in all its details and the article is very copiously illustrated. As to results, the author states that they were in every case excellent. No stenosis was ever observed. In an arterial suture the threads had completely disappeared six months after anastomosis, whilst in the venous anastomosis of a replanted kidney they could be seen ten months after the operation. After the extirpation and replantation of the spleen with circular suture of the splenic vessels, the calibre of the artery and vein remained entirely normal after 22 months. Dr. Hideyo Noguchi has papers on the Direct Cultivation of Treponema Pallidum and its Morphological and Pathological Variations, reprinted from the *Journal of Experimental Medicine*. He describes a method for the direct cultivation of the parasite from human syphilitic lesions, employing a solid medium. The several pure cultures agree in morphological and cultural characters, grow only in the presence of sterile tissue (rabbit kidney or testicle) under anaerobic conditions, and do not produce putrefactive odours. In cultures Treponema pallidum multiplies by longitudinal division, usually a symmetrical process. Inoculation of the pure cultures into the skin of monkeys was followed by the production of primary syphilitic lesions, the blood giving a positive Wassermann reaction. Not all strains of the spirochætæ can be successfully implanted on other animals when obtained directly from syphilitic lesions in man. Racial differences occur, and probably can be produced artificially. The different specimens can be divided into thicker and thinner forms or types and an average or normal form or type. The lesions caused in the testicle of the rabbit differ according to the variety inoculated, and consist of either a diffuse or a nodular orchitis. This is a highly important distinction, and if after the further study of pallida it should be maintained it will be capable of throwing light on certain important clinical features of human syphilitic disease. The volume contains many papers by Jacques Loeb. Among them is a study of Heredity in Heterogeneous Hybrids, reprinted from the *Journal of Morphology*, which is well worthy of careful perusal. We can give only his conclusions, which should stimulate a desire for access to the original paper. The spermatozoon has two distinct effects upon the egg—namely, it causes its development and it transmits certain parental hereditary characters to the offspring. The transmission of hereditary characters through the sperm is in many cases merely an accessory function. It becomes of vital importance only in those forms where the male is heterozygous for sex and where the species can be propagated only through sexual reproduction. If the sperm nucleus be chemically almost identical with the egg nucleus, it is possible for it to force one or a few characters upon the developing embryo. If the difference between sperm and egg nucleus exceed a certain limit—which structural chemistry may one day be able to define—the hereditary influence of the spermatozoon is, as a rule, completely, or almost completely, obliterated, and the result is a purely maternal larva, rendered more or less sickly through the presence or formation of foreign or faulty substances. The formation of the embryo is purely a matter of the egg. The spermatozoon removes only certain obstacles for the development of the egg, but does not cause its development by carrying an activating enzyme or katalyzer into the egg. Expressed in the form of a paradox, we may say that fertilisation is primarily and essentially artificial parthenogenesis.

Vademekum der Speziellen Chirurgie und Orthopädie für Aerzte. Von Dr. HERMANN ZIEGNER, Dirigierender Arzt des Städtischen Krankenhaus, Cüstrin. Mit einem Vorwort von Prof. Dr. R. KLAPP, Berlin. Leipsic: F. C. W. Vogel. 1911. Pp. 201. Price, paper, 5 marks; bound, 6 marks.—Summaries of the main facts of a subject may prove very useful to a student on the eve of an examination, provided he has studied the subject well before; but if the student thinks to save himself the trouble of working by taking a short road to knowledge, he will find that the result is unsatisfactory. This book is a very good example of its class. The main facts of a large part of surgery are assembled in it in a compact form, and it will serve for the recapitulation of the subject just before an examination. From the small size of the book it necessarily results that all statements are put as briefly as possible. The book may also prove of value to the medical practitioner in the diagnosis or treatment of a case, for it may furnish a hint. The book has been written carefully.

MISCELLANEOUS VOLUMES.

THE Presidential Address of Professor SCHÄFER on *Life: its Nature, Origin, and Maintenance* (London: Longmans, Green, and Co. 1912. Pp. 36. Price 1s. net), delivered before the British Association in September, was published in THE LANCET of Sept. 7th, and its subject matter was discussed editorially at length in the same issue, so that it

is unnecessary here to do more than acknowledge its publication in pamphlet form for those who wish to keep it on their bookshelves.——A little volume entitled *Coprostasis*, by Sir JAMES SAWYER (Birmingham: Cornish Bros. 1912. Pp. 74), is a separate publication of Chapters VIII. to XIII. of the fifth edition (1912) of the author's "Contributions to Practical Medicine." It contains his previous findings and writings, revised with rigour and augmented by later experience, on a condition of frequent occurrence, and one which can be treated with success when measures adapted to the removal of the cause are determined by adequate diagnosis.——Manuals of First Aid abound, but there are none too many books suited to instruct the intelligent public in the task of serious nursing at home. Only a limited few can avail themselves of hospital advantages, while the cost of private nurses and of maintenance in nursing homes is prohibitive to numerically a large proportion of the intelligent middle class. In a little book on *Home Nursing* (London: George Gill and Sons. 1912. Pp. 193. Price 9*d*. net.) Mr. C. F. WIGHTMAN, F.R.C.S., aims especially at instructing this class how they can efficiently aid their medical attendant in putting his patient under the most favourable conditions that their own home resources and willing, if untrained, service will allow. He discusses in separate chapters the nurse and the sick-room, respiration and ventilation, the nurse's duties, infection and disinfection, infants and children, digestion, food and cooking, common illnesses and surgical nursing, and personal hygiene, with the use of local remedies and appliances. There are also sections on roller bandaging and sick recipes.

Not a little interesting material concerning cannabis indica—material historical, botanical, microsoopical, chemical, physical, therapeutical, and pharmacological—has been gathered together and detailed in racy vein by VICTOR ROBINSON in *An Essay on Hasheesh, including Observations and Experiments* (New York: Medical Review of Reviews. 1912. Pp. 83. Price 50 cents, post paid). The descriptions of the psychical results produced in some experiments with the drug are dramatically recorded, and the peculiar humour dependent on the rapid transition and association of ideas is well illustrated.——In *Fifty Doctors Against Alcohol* (London: The Brotherhood Publishing House, Holborn Hall, E.C. Pp. 282. Price 2*s*. 6*d*.) are collected the addresses given by members of the medical profession on July 23rd, 1911, to Brotherhoods, Sisterhoods, and others in Birmingham, during the meeting there of the British Medical Association. In some cases mere notes are given, in others selected sentences, and in yet others the text stands more or less complete. To select only a few of the addresses given we may mention those of Mr. C. J. Bond, of Leicester, "Intemperance, Some Theoretical and Practical Conclusions"; Professor Murdoch Cameron, "Strong Drink our Greatest Enemy—a Doctor's 40 Years' Experience"; Mr. C. W. Cathcart, "Recent Changes in Medical Opinion"; Sir T. S. Clouston, "Alcohol and Mind"; Mr. W. McAdam Eccles, "Total Abstinence versus Moderation"; Sir Victor Horsley, "Citizenship and Temperance"; Dr. James Ritchie, "The Effect of Moderate Quantities of Alcohol on the Higher Functions of the Brain"; Sir Alexander R. Simpson, "Why Not Drink Wine?"; Dr. Mary D. Sturge, "Medicated Wines"; and Professor G. Sims Woodhead, "The Christian Ideal."

JOURNALS.

Journal of Laryngology, Rhinology, and Otology.—The October number is devoted, with the exception of one article, to translations and abstracts of papers and to summaries of proceedings of special societies which will be found of service to the practitioner desirous of keeping himself acquainted with the current literature relating to the throat, nose, and ear. The one exception is a brief account of a Case of Acute Cerebro-spinal Meningitis of Nasal Origin, by Dr. H. L. Gregory. The report of the case is of value and of clinical importance in view of the recent discussion in the Section of Laryngology of the British Medical Association on the treatment of suppurative ethmoiditis, which was reported in THE LANCET of August 24th, p. 533. The patient, aged 17, had been treated for chronic nasal catarrh by removal of the inferior and part of the middle turbinates and an adenoid mass. Post mortem, on stripping the dura mater from the anterior fossa of the skull there was found a hole 7 mm. by 5 mm., with inflamed edges, in the roof of the left posterior ethmoidal cells, through which a probe passed with great ease directly into the left nostril.

The British Journal of Inebriety. Vol. X. No. 2. October, 1912.—In her inaugural address as President of the Society for the Study of Inebriety, which is published in the October number of this journal, Mrs. Mary Scharlieb, the first woman to occupy that position, makes the very appropriate suggestion that during her year of office special prominence should be given to the discussion of those aspects of alcoholism which have reference to women. She points out that the question of the relation of inebriety to abortion, stillbirth, and inability to suckle needs further elucidation, and that this is a question as to which clinical evidence should be easily obtainable on a large scale. Two other articles of interest are also contributed by women. Dr. Mary D. Sturge, in a paper on medicated wines, refers to the growing use of preparations of this class, and to their insidious influence in promoting inebriety, especially among women. She mentions with approval the methods adopted in Leeds for educating public opinion on the real character of these articles, by the circulation of authoritative analyses of their contents, and by eliciting information at Brewster Sessions regarding their alcoholic strength. Lady Henry Somerset, in a brief account of her well-known farm colony at Duxhurst, advances a somewhat novel view regarding industrial work in reformatories, which, based on such exceptionally wide experience as she has had, deserves careful consideration. She urges that it is desirable to put patients to work at some occupation in which they have not been engaged before. This breaks continuity with the past, and avoids the danger of keeping up the line of thought which is associated with the evil habit. Other articles deal with the relation of inebriety to feeble-mindedness, and with the discussion of alcoholism at the Eugenics Congress.

The Universal Medical Record, the new periodical, the first issue of which, dated January, 1912, was noticed in THE LANCET of Jan. 27th, has now completed its first volume, a bound copy of which lies before us. It contains 576 pages of interesting and up-to-date material, and is furnished with an extended index.

GIFT OF A HOSPITAL.—The foundation-stone of a munificent gift to the sick poor of the Consett district, co. Durham, was laid on Oct. 16th. This gift takes the form of a hospital, to be called the Richard Murray Commemoration Hospital, and has been given by the donor, Mr. Richard Murray, in memory of King Edward. The total value of the gift amounts to £57,000, and its control is invested in three trustees and six governors. The object of the donor is described as not only for the medical and surgical care of the sick poor, but he also desires that the work shall go farther and build up the patients during their convalescence, so that they can go from the hospital back to their work. The larger general hospitals in the big towns are so overcrowded that this side of the work must necessarily be curtailed. The hospital is to be fully equipped with operating block, X ray room, &c., and is so designed that it can be extended in case of need without disturbing the work of the building or the comfort of the patients. It is expected that the hospital will be completed in 18 months.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 2, 1912.

The National Insurance Act.

As will be seen by the correspondence in our columns this week, and as must have been gathered from many communications to the lay press and public utterances made during the past few days, Mr. LLOYD GEORGE'S statement at the Conference of the Advisory Committee on Wednesday, Oct. 23rd, and his summary of that statement made in the House of Commons the same afternoon, have not produced the definite impression upon which it is probable that he calculated.

The members of the Advisory Committee in their comments on Mr. LLOYD GEORGE'S statement, the official minutes of which did not reach us last week in time for publication in full, expressed themselves on the whole as satisfied with the course taken by the Chancellor of the Exchequer. The representative of the General Federation of Trades Unions did not receive the proposals with much enthusiasm, and obviously considered that too much attention had been paid to medical claims. He regretted that the scheme for a national service had been thrown over. But the Vice-President of the National Conference of Friendly Societies was well satisfied that the formation of a State Medical Service was not being attempted, and considered that the terms offered were exceedingly liberal and such as should be accepted by the medical profession. A representative of the Association of Industrial Assurance Companies, of Collecting Friendly Societies, and of the Prudential Assurance Company declared the anxiety of his constituents that the medical profession should come into the scheme with a real desire of giving the best possible service under the Act. He thought that they would acquiesce, and that an improved service was now provided. Mr. W. J. V. WOOLCOCK spoke for the pharmaceutical chemists, and thought that the provision of a certain 1*s.* 6*d.* as a capitation fee, with an extra 6*d.* designed alike to cover the high drug bill and to check frivolous prescribing, afforded an opportunity for proper coöperation between the medical profession and the chemist. The deduction of 6*d.* from the sanatorium benefit for domiciliary attendance did not meet with the approval of certain representatives of trades unions and small friendly societies; but Mr. D. W. EVANS, speaking as a representative of King Edward VII. Welsh Memorial Association, was glad to think that in this way a practical difficulty had been removed—namely, the difficulty of associating the general practitioners of the country with the details of what is to be a national movement for the prevention and treatment of tuberculosis. This is a view which will certainly be widely challenged. Dr. NORMAN H. WALKER urged a point of view, that was also supported by Mr. HOBSON, speaking for the Sheffield cutlery manufacturers—namely, that the medical profession should have the 10 per cent. representation upon the Local Insurance Committees, to which it has always put forward a reasonable claim; and Sir WILLIAM PLENDER, after referring to the results of his well-known investigations in certain selected towns, said that the offer made by the Government to the medical profession "was a fair offer and an adequate offer, if not, indeed, a generous offer." The proposals of the Government have been, therefore, on the whole, if with reservation, approved by the Advisory Committee, while Mr. LLOYD GEORGE incidentally indicated the possibility of altering the constitution of the Local Insurance Committees.

As soon as the decision of the Government with regard to medical benefits was made known, the State Sickness Insurance Committee of the British Medical Association, which body was appointed in July last, at the time of the breaking off of all negotiations between the Association and the Government, to watch the interests of the medical profession in relation to the Act, and to report thereon to the Council of the Association, proceeded to prepare a considered statement. The statement was submitted to the Council of the Association on Thursday, Oct. 31st, and consisted of a *résumé* of the various actions taken by the Committee in the interval; of an analysis of the offer now made by the Government to the medical profession with particular reference to the satisfaction or otherwise of the cardinal demands; and of a summary of the whole situation as it affects the medical profession. The report pointed out fairly the arguments for accepting the offer of the Government, at any rate provisionally, but showed at the same time that the demands of the medical profession, as formulated in the familiar manner, could be better obtained under one of the schemes put forward by the British Medical Association for a public medical service. This report, after consideration by the Council, will be laid before the Divisions, and later before the Special Representative Meeting of the Association in the third week of November, when the Council will require from the Representative Body instructions how to act.

The Memorial to Lord Lister.

THE really great names which stand out in history as belonging to the benefactors of humanity need no other memorial to their fame than their work, whose results are stamped indelibly on the records of human progress. This is true, but true it is also that every age should honour in some material manner those who have supremely benefited it, for around the material testimonial the history of the dead man's exploits will cluster, to the illumination of their real meaning and with obvious invitation to others to emulate past greatness. Of all the men who from time to time in the roll of the centuries have stepped from the ranks of their fellows into full and admitted generalship, and have given to the world knowledge which has revolutionised all that went before, none is a more striking figure than LISTER, the father of antiseptic surgery; for, to use the words of Lord AVEBURY at the meeting

in the Mansion House last week in support of the movement for raising a memorial to LISTER, "No one with the possible exception of PASTEUR has done so much to mitigate the sufferings of poor human nature." Viewed from this standpoint alone the work of LISTER requires no other monument than the gratitude of the peoples of the world. Nevertheless, it is fitting that his magnificent labours should be recorded in some permanent and tangible manner—the manner in which the world has recorded the achievements of its other great leaders—so that the particular branches of knowledge in which he excelled may receive the impetus that will follow upon such recognition.

The scheme which the Memorial Committee has now put forward will be welcomed, we believe, with unqualified approval. In its threefold character it is alike national and international, large in scope and yet directed towards fostering the particular branches of learning with which LISTER'S name will be ever associated, and for the promotion of which, while he was with us, he accomplished such prodigious exploits. In Westminster Abbey there will be a medallion erected in the north aisle among those of the most distinguished scientific men of their ages; a public monument will be erected in London; and an International Lister Memorial Fund will be established for the advancement of surgery. Thus the memory of one who received in his lifetime the homage and gratitude of the entire civilised world will be celebrated in our national cathedral; our metropolitan city will have its monument to his fame; and the workers in science, whose home is in all lands where the light of wisdom and knowledge has shed its beneficent rays, will have the name of LISTER permanently kept green among them.

The War.

THE world is watching with breathless expectation the tremendous events now occurring in Turkey. In these days when the civilisations of various races are so closely linked—for spread of knowledge and facilities of travel and transport have abolished geographical boundaries to a great extent—the spectacle of four allied kingdoms flying to arms as a last resort against a common foe is a matter of the closest interest to every one of us. To medical readers the visions of the terrible misery caused by such a convulsion must be acutely present. The slain and the wounded in battle form but a small fraction of the martyrdom of war. The untold miseries of cold, hunger, destitution, terror, and assault are all doing their worst on millions of men, women, and children, and the tale of disease and death will surely be appalling. What such organisations as the Red Cross Society and what private generosity can do to relieve the sufferers is being attempted, and every effort should be made to supplement these attempts. Where hearts bleed pockets should bleed.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. C. Schilling has been recognised as *privat-docent* of Diseases of Tropical Countries.—*Bordeaux:* Dr. Bégouin, *agrégé*, has been appointed to the chair of Clinical Midwifery, in succession to Dr. Chavannaz.—*Chicago:* Dr. Arthur I. Kendall, of Boston, has been appointed to the chair of Bacteriology.

Annotations.

"Ne quid nimis."

THE STUDY OF TROPICAL MEDICINE AS THE PRICE OF EMPIRE.

Now that the King has set his mark of approval on the work of the London School of Tropical Medicine by the gracious letter to Mr. Austen Chamberlain, enclosing a donation of £100 to the funds, it is to be hoped that renewed efforts will be successful in securing for the school the full sum of £100,000, for which an appeal was made some time ago. At present only about half that sum has been secured; but encouraging as this is, it is not enough. At the annual dinner of the school on Oct. 23rd Sir Ronald Ross urged the development of the study of tropical sanitation, which, he said, had not developed anywhere to the desirable extent. He humorously referred to the supposed antagonism of the two schools—those of London and Liverpool—saying that they were deadly enemies on the stage but friendly off it, and emphasising the fact that it was along the path opened up by friendly rivalry that progress made its way. From the chairman, General Sir Reginald Talbot, it was learnt that altogether 1240 students had passed through the London school and that encouragiug signs of expansion were evident. Sir William Bennett had entrusted the £10,000 bequeathed by Lord Wandsworth for the promotion of medical research to administration by the school, which, among other things, established out of it a research scholarship tenable for two or three years, and Dr. Lieber would soon go as interim Wandsworth scholar to West Africa to study parasitic diseases. Sir Patrick Manson, referring to a rumour that it was under contemplation to establish another course of instruction in tropical hygiene and sanitation, pointed out, we think very justly, that not only would it be impossible to establish such a course elsewhere with better opportunities, but further that it would be a public calamity to weaken in this way the position of the London school. He gave excellent examples of the fact that the study of tropical diseases, which are frequently of a most malignant character, levies a constant terrible toll, not only on our native dependents in many regions and our Government officials to whose charge their care is entrusted, but also on those of our countrymen upon whom devolve the commercial development and progress of the empire. This study involves the sacrifice of pecuniary and other personal interests, and a willing submission to more than ordinary danger to health and life. He referred to Dr. Wenyon's heroic action in inoculating himself with "oriental sore," whereby he had proved that the incubating stage might extend for some months after inoculation before any clinical signs manifested themselves. The expedition of Dr. Bahr, too, had established a novel point in pathology—viz., that not only the pathological characters but also the biological habits of a germ were sometimes materially altered during its passage through an intermediary host. The systematic work, then, of our schools of tropical medicine not only gratifies our national pride by keeping the nation in the forefront of scientific progress, but enables us also to fulfil our duty to our foreign fellow subjects and to those of our own race whom we send out in charge of them or who take upon themselves a dangerous share in expanding our commercial supremacy. They do this, not only by laborious work at home, but by research in the disease-haunted regions themselves, seeking to establish the causes and diagnosis, the treatment, and, what is even more important, the prevention of these scourges of the human race. Surely it is better to pay the price of empire in money rather than in lives.

HEXAMETHYLENTETRAMINE IN SYSTEMIC INFECTIONS.

ORIGINALLY introduced under the name of urotropine as a urinary antiseptic, hexamethylentetramine has been shown to have a much wider use. By experiments carried out at the pharmacological laboratory of the Johns Hopkins Hospital in 1908 Dr. S. J. Crowe showed that this drug is not excreted by the kidneys alone, but that soon after administration may be demonstrated in practically all the body fluids. In the Bulletin of the Johns Hopkins Hospital for September, 1912, he has reported a number of interesting therapeutical applications of this fact. In cases of post-operative biliary fistulæ he found that the drug appeared in the bile and urine almost simultaneously, and that provided large doses (at least 75 grains daily) are given the drug appears in the gall-bladder in sufficient concentration to inhibit the growth of bacteria in the bile. In cases of infection by the typhoid bacillus the interior of the gall-bladder was rendered sterile—at least, as long as the treatment was continued. These results led to the conclusion that the drug would be valuable in the prevention and treatment of infections of the biliary passages, and that it should be given as a protective measure before operations on the gall-bladder or bile-ducts. We may add that for a similar reason the drug is used in the treatment of gall-stones. As it has been shown that the spread of typhoid fever is largely due to infected excretions, and that relapses are due to some locally persisting infection, not infrequently situated in the gall-bladder, he recommends that large doses be given throughout the course of typhoid fever as a prophylactic measure. During the last four years the value of hexamethylentetramine in threatened or actual cerebro-spinal infections has been investigated at the Johns Hopkins Hospital. There are many conditions, such as compound fracture of the skull, infections of the scalp, acute infections of the ear or nasal sinuses, and certain operations, which may be followed by intracranial infection. Moreover, it has been shown by Simon Flexner and others that both the meningococcus and the virus of poliomyelitis have a predilection to invade the mucous membrane of the naso-pharynx and thence to pass, presumably by the lymphatics, to the central nervous system. Post-mortem studies in poliomyelitis have shown that meningitis always precedes invasion of the nervous system. This suggests the hope that when the disease is recognised early it may be arrested by the excretion of the drug into the cerebro-spinal fluid inhibiting its growth. Dr. Crowe found that when given by the mouth hexamethylentetramine appears in the cerebro-spinal fluid in a quantity which reaches its maximum 30 to 60 minutes after administration, and that doses within therapeutic limits were excreted in sufficient quantity to markedly inhibit the growth of streptococci inoculated into the fluid after its removal from the body. After subdural inoculation of dogs and rabbits with a virulent culture of streptococci 60 to 80 grains of the drug daily deferred, and in some cases prevented, fatal meningitis. Since 1908 it has been administered by mouth or rectum as a routine measure at the Johns Hopkins Hospital in all cases in which meningeal infection is a possible or threatened complication, and its value seems definitely to be established. These include compound fractures of the skull, tumours of the hypophysis necessitating operation through the nose, post-operative cerebro-spinal fistulæ, infections of the ear and nasal sinuses, and acute poliomyelitis. In 35 consecutive cases of fracture of the base of the skull with bleeding or escape of cerebro-spinal fluid from the nose or ears meningeal infection never occurred. About 70 grains of the drug were given daily. On the other hand, nine deaths from meningeal infection or brain abscess occurred in 35 previous cases in which it was not given. In the hypophysis cases 40 to 60 grains were given as a prophylactic measure in the 24 hours preceding operation and larger amounts for several days after operation. Dr. Cushing's operation—removal of the floor of the sella turcica through the nose and sphenoid sinus and incision of the dura covering the gland—was performed to relieve pressure symptoms. In 31 cases there were no post-operative complications. In nine cases cerebro-spinal fluid escaped through the nose for some days, and there were symptoms of meningeal infection. Of these three were fatal, and the necropsy showed that the operation had been misdirected and the cranial cavity entered anterior to the chiasma, inoculating the cortex with organisms from the nose. Six cases of cerebro-spinal fistulæ were treated, and all escaped fatal meningeal infection. Barton and others have shown that hexamethylentetramine is excreted by the mucous membrane of the ear, and in large doses discourages local infection. At the Johns Hopkins Hospital diminution in the amount and change in the character of the discharge were noted. For the past two years the Massachusetts Board of Health has recommended the drug in an epidemic of poliomyelitis. Numerous cases of recovery without paralysis have been reported and attributed to the treatment.

THE TURCO-ROMAN BATH.

THE practice of bathing as a luxury or for therapeutic or hygienic purposes, as distinguished from the mere removal of discomforting superficial dirt, probably took its rise in oriental countries, passing thence through Greece to Rome, where it attained the maximum of luxuriousness in the later empire. At that time many wealthy people had complete bathing establishments attached to their villas, while there are said to have been upwards of 870 public baths in Rome. The bath consisted of several rooms; the apodyterium, or undressing room; the frigidarium, or cool room, containing also a cold plunge bath; the tepidarium, or warm room; and the calidarium, or hot-air room, having a hot-water bath at one end of it. To these, in later Latin times, was added the laconicum (so called from Laconia, where it originated), or sudatorium, where the heat was very great. The bather passed through all these rooms in succession until he arrived at the calidarium, or the laconicum. Then he returned to the tepidarium, where cold-water affusion was practised, and he underwent a thorough scraping, friction, kneading of his muscles, and stretching of his joints at the hands of an attendant, and was subsequently anointed all over. A long rest for cooling off was then taken, prior to passing once more into the open air. The private baths of the wealthy were constructed on a similar pattern. They were highly and expensively ornate. To the public baths were attached gymnasia, colonnades, often fragrantly scented, an amphitheatre, and even libraries, so that they became the favourite lounging places of the wealthier and more fashionable citizens. In an interesting monograph [1] Dr. W. Oscar Jennings gives full information on many of these particulars and traces the history of the bath among the Greeks, the Romans, through the Middle Ages, concluding the historical part of his book with references to the bath in France, Germany, England, Russia, Finland, and among the Turks, Egyptians, Indians, Mexicans, and Irish. Cortez found public baths among the Aztecs. Dr. Jennings especially emphasises the universal use of the bath

[1] Le Bain Turco-Romain, les Applications Hygiéniques et Thérapeutiques. Étude Médico-historique, par le Docteur Oscar Jennings, de la Faculté de Médecine de Paris, Fellow of the Royal Society of Medicine. Préface du Docteur J. Lucas-Championnière, Membre de l'Institut, Membre de l'Académie de Médecine. Paris: Vigot Frères. 1912. Pp. 69.

as a hygienic measure. Dealing in the second part of his monograph with the Turkish bath, viewed from a hygienic and therapeutic standpoint, as we know it to-day, Dr. Jennings reminds us that notwithstanding that "Hammams" appeared in England at the close of the seventeenth century, we owe its revival in modern times largely to the publication in 1850 by David Urquhart of "The Pillars of Hercules." This book led to the erection of a so-called Turkish bath (but rather a hot air than a vapour bath) at Blarney, by Dr. Barter, and a short time afterwards to one by Sir John Fife, physician to the Newcastle-on-Tyne Infirmary. As a regulator of the bodily functions and an eliminator of toxins, Dr. Jennings extols the Turco-Roman bath—a combination of sudorotherapy, massotherapy, and hydrotherapy—which, he says, is regarded with enthusiasm by practically every practitioner who has tried it himself. He highly recommends it in conditions of faulty metabolism, and especially in alcoholic and drug addiction. As is well known, the condition of extreme depression following the stimulant effect of the dose is the chief factor in compelling those who have once become addicted to keep on having recourse to the drug. But it is precisely the dispersion of this sense of depression, restlessness, and sinking, of mental and physical collapse, for which the alcoholic or the drug *habitué* has recourse to his poison, that is the distinguishing therapeutic characteristic of the Turkish bath. There exists, says Dr. Jennings, a certain vague resemblance between the sensations aroused by the bath and those derived from the morphine injection. Caution must be observed, it is true, especially in not being tempted to overdo it, either in duration or in the degree of temperature; and particularly must care be taken by the novice not to allow himself to be carried away by the enthusiasm of the old *habitué* of the bath, who is very prone to play the part of a proselytising professor of balneo-therapy. It is remarkable what a small proportion of people in this country have ever taken a Turkish bath. It is equally remarkable that few, if any, of those who have done so fail to experience the delightful sense of euphoria, the physiological elation, which is at the same time indicative of its hygienic value and suggestive of its therapeutical possibilities. As a therapeutic measure, however, it should be practised only under the sagacious counsel of a medical man well cognisant of its effects and acquainted with the patient's condition.

INFANTILE BERI-BERI.

A RECENT writer has with some truth remarked that of all the so-called tropical diseases beri-beri has probably the distinction of having had, at least of late years, the largest amount of literature associated with it, and of having been the subject of the most extensive discussion, as well as of having had the most diverse opinions expressed concerning its etiology, symptomatology, and pathology. Nor is this much to be wondered at considering the great economic importance of the malady to traders and others in many tropical lands, and considering also the terrible injury to health and destruction of life wrought by the disease for so many years, particularly in the Far East. The fact that infants suffer as well as adults from beri-beri apparently escaped recognition for a long time, and it was only about 12 years ago that the condition in young children was first described by Professor Hirota of Tokyo. Since then the subject has been carefully investigated by some of the American physicians in the Philippine Islands, the malady being of comparatively frequent occurrence there. In THE LANCET of Dec. 3rd, 1910, we directed attention to an interesting article on Infantile Beri-beri, written by Dr. Allan J. McLaughlin and Dr. Vernon L. Andrews, of the Manila Medical School.[1] These experts showed that a high infantile mortality rate prevailed in Manila year after year, and that 50 per cent. of the Filipino deaths occurred in children under one year of age. It was, moreover, proved that three-quarters of the latter deaths, contrary to usual experience, were among breast-fed infants, many of whom had suffered from beri-beri, while others whose deaths had been certified under other headings had really died from that disease. In continuation of the previous work Dr. Andrews has recently published a further contribution on Infantile Beri-beri in the *Philippine Journal of Science*, Section B, No. 2, 1912, in which he gives the results of his inquiry into the causation of the disease among Filipino children of tender age. The clinical condition of the infant and the mother was carefully studied, and analyses were made of the milk of mothers whose infants had just succumbed to the malady; where possible the body of the infant was subjected to a post-mortem examination and material obtained for histological investigation. Dr. Andrews's working hypothesis was that infantile beri-beri was due to the defective quality of the mother's milk. The average Filipino mother is usually in poor condition, her diet consisting largely of white (overmilled) rice with a little fish or meat, rarely vegetables or fruit. Many of these women before pregnancy have already shown signs of beri-beri, but where these signs have been apparently absent they show themselves as soon as the system is called upon to provide material for a new being. Chemical analyses of milk from these mothers' breasts showed that it was, on the whole, poor in quality, though some were quite normal as far as protein, fat, and carbohydrate were concerned. In seeking to diagnose beri-beri in the body of a dead infant Dr. Andrews relied upon the presence of the following conditions—hypertrophied right heart, congestion of the viscera, anasarca, and the absence of other findings sufficient to account for the death. Assuming that the disease in infants is caused by the quality of the mother's milk, it was thought that the condition could be produced in laboratory animals. Accordingly a novel series of experiments was devised in which a number of young puppies from 2 to 14 days old were practically suckled by Filipino women whose own babies had quite recently died from beri-beri. As the majority of infants who contract this disease die from it before reaching the age of one or two months, it was surmised that if the puppies were fed on milk that had already been shown to give rise to beri-beri in young children, obvious indications of the malady would be detected within a period of about four weeks. This proved to be the case, for although in a number of instances the experiment could not be continued for various reasons, all the remaining puppies used in the experiments and wet-nursed by the human mothers, as above described, developed incoördination and weakness of the extremities, and particularly of the hind legs; in all slight degeneration of the peripheral nerves was demonstrated by the Marchi method; and all showed œdema and anæmia of the subcutaneous tissues. In Dr. Andrews's opinion the high infantile mortality in Manila is due to beri-beri, and it is due solely to the ingestion of the mother's milk which is lacking in some essential substance necessary for nerve nutrition in the child. There are reasons for believing that when the mother is placed upon a better dietary both she and her baby rapidly improve, except, of course, where the infantile disease has advanced too far already. It appears, unfortunately, that undermilled rice, from which the superficial layers containing the so-called "vitamines" have not been removed in the process of milling, is not ordinarily available in the open market in Manila. We quite agree with Dr. Andrews that as a prophylactic measure it is very

[1] Philippine Journal of Science, July, 1910.

desirable that the local rice dealer should be compelled by law to have always on hand and available for sale to the natives a sufficient stock of this variety of rice which is free from danger. Unhappily Filipinos, like many other native races, have got accustomed to and prefer the white over-milled rice which causes the beri-beri, so that it becomes very necessary, as urged by Dr. Andrews, that a campaign should be begun forthwith to educate the people, and especially pregnant women, in the essentials of a proper dietary, and how they may easily avoid the development of beri-beri in themselves as well as in their offspring. In our issue of Oct. 12th (p. 1005) Dr. H. Fraser and Dr. A. T. Stanton remark that education must be a slow process, but that it is a moot point whether this plan might not be the most successful.

MEDICAL HISTORY.

WE learn with pleasure that a Society for the Study of Medical History has been established in London after many years of hesitation and delay. It starts under very favourable auspices as a section of the Royal Society of Medicine. The first meeting will be held on Wednesday, Nov. 20th, at 5 P.M. Similar societies have long been in existence in the United States, Germany, and France with the happiest results. It is intended to give a liberal interpretation to the term "medical history," and it is hoped that exhibits from members in all parts of the country will be a feature of the meetings. An educational side will be developed by lectures given by recognised authorities on the subject open to all practitioners and medical students. Those who wish to join the new section, which already contains 128 members, should communicate with the honorary secretaries at the society's house, 1, Wimpole-street, W.

THE RAW MATERIALS OF ETHER AND CHLOROFORM.

IN the new edition of Sir Frederic Hewitt's text-book on "Anæsthetics and their Administration," which was reviewed in our last issue (p. 1154), some interesting statistics have been included concerning the predilections of London anæsthetists as to the method of manufacture of the ether and chloroform which they use. Ether can be made from methylated spirit or from (dutiable) rectified spirit; chloroform also can be made from both these spirits, and from acetone too. The cost of the finished products varies enormously according to the method of manufacture. Thus in the list of a well-known firm of makers, acetone chloroform is quoted at 2*s.* 8*d.* per lb.; methylated chloroform at 2*s.* 10*d.*; rectified spirit chloroform at 6*s.* 10*d.* Ether in the same list costs 1*s.* 10*d.* per lb. when made from methylated spirit, and 8*s.* 5*d.* when made from rectified spirit. The cause of this wide divergence is the very heavy duty levied upon rectified spirit. Efforts have been made to induce Chancellors of the Exchequer to remit this duty, but so far in vain. It is, therefore, of considerable practical importance to know whether there is any difference—and if so, what—in the safety, efficiency, and general physiological action of the drugs made in these different ways. Sir Frederic Hewitt and Dr. Henry Robinson, his collaborator in editing the new edition, both hold that clinically there is no such difference, provided the specimens are properly prepared and purified. In this opinion they are supported by a considerable proportion of practising anæsthetists; but there are also a good many who take other views. To test the general feeling, Dr. Robinson, it appears, some time ago circularised all the anæsthetists holding hospital appointments in London on a certain date, with results which are summarised in Sir Frederic Hewitt's book. As regards ether, 14 anæsthetists (out of 53 who replied to the circular) use rectified spirit ether; 28 use methylated ether; and 11 use both. With respect to chloroform the answers are more complex, and to quote all the shades of opinion would be tedious; but in private practice, as opposed to hospital work, 29 of the 53 use rectified spirit chloroform only. There is thus a fairly even division of expert opinion on the question. As long as the authority of Sir Frederic Hewitt is supported by so considerable a section of his fellow-specialists it is unlikely that any Chancellor of the Exchequer will consent to forego the revenue from rectified spirit used in the manufacture of ether and chloroform. Moreover, the Royal Society of Medicine not long ago recommended that acetone and methylated chloroforms should be made official in the next edition of the British Pharmacopœia; and Sir T. E. Thorpe asserts that no analyst can detect the source from which a purified specimen of chloroform has been prepared. The commercial aspect of this controverted question is the least important side of it; but it cannot be entirely overlooked, and the recent discovery of a new process for manufacturing acetone, whereby the price of this raw material will be greatly reduced, must increase the existing disparity in prices. The general practitioner has to study price-lists more closely than the specialist; and he will probably in future buy less than in the past of ether and chloroform which have been heavily taxed by the Revenue.

THE GARDEN CITIES AND TOWN PLANNING ASSOCIATION.

THE value of the services rendered to public health, not only by the directly hygienic aspects of the movement for the better town planning, but by its æsthetic aspects also—for æsthetics, as contributory to a wholesome and joyous state of mind, have a distinct hygienic influence—is so great, and is now becoming so widely recognised by all thoughtful members of the community, that it would be a thousand pities should the movement be in any way curtailed. Since, as Professor G. H. Reilly pointed out at the Town Planning Conference of 1910, we must henceforth look to organised democracy for all public uplifting, it is essential that the democracy as a whole, and not merely a few specialists, shall be brought to grasp fully the importance of this work, and shall be wisely instructed as to how they can take their part in its accomplishment. The Garden Cities and Town Planning Association has shouldered all the responsibility of this propaganda since its beginning. It has given help and advice wherever asked for; and further, it has gone out into the highways and byways seeking to arouse a wider interest in the subject that it might distribute its valuable help more freely and to better effect. Naturally all this calls for expenditure of money, and an appeal by the association (whose offices are now at 3, Gray's Inn-place, W.C.) for a guaranteed subscription for the next five years of at least £1000 has appeared lately in many papers. Every medical man especially should be interested in this appeal, not only as a man of culture and education to whom the pursuit of the beautiful cannot fail to commend itself, but also as a professional hygienist whose chief aim is the prevention of sickness and the propagation of mental, moral, and bodily health. The decentralisation of industry, the provision of ample air space, and especially of ample sunlight for every dweller in the towns, the purifying influence of vegetation, and the joyous mental effects of beauty, which in themselves make for health—the importance of all these things is known to none better than to the members of the

medical profession, and these are the objects towards which this association has already done so much, towards which it will be able to do far more in the future if its efforts are not curtailed by lack of funds. For fortunately it may as truly be said of the beneficent leaven of enlightenment as of the malignant leaven of rumour, that it acquires strength with its spread.

THE HISTOLOGICAL CHANGES IN SALVARSAN POISONING.

THE nature of the untoward effects which sometimes follow the administration of salvarsan has been the subject of much controversy. Professor Gaucher has always insisted that they are due to arsenical poisoning. In the *Cleveland Medical Journal* for September Dr. H. O. Ruh has recorded a case which bears out this view. It is of great importance, because a careful histological examination of the organs was made. A well-nourished and well-developed woman, aged 54 years, was admitted into the Lakeside Hospital. She had had nine children, of whom four were living and well, and five had died at the ages of 3 or 4 months. She had also had two miscarriages. At the age of 10 years a swelling began above the right knee and gradually enlarged until at the age of 18 it ulcerated. The ulceration persisted, and two years before admission a piece of the femur was resected; four weeks later another piece was resected; and five months later a more extensive resection was performed. Eighteen months before admission amputation was performed in the upper third of the thigh. The wound healed, but two sinuses persisted, from which there was a profuse discharge of pus. There was no family history of tuberculosis. On examination the stump showed three ulcerating surfaces, each about 3 centimetres in diameter, from which exuded foul pus. The edges were reddened, raised, and granular. The heart and other organs were normal. The urine contained a few granular casts, but no albumin. The Wassermann reaction was positive; 0·5 gramme of salvarsan was injected intravenously. After the injection she complained of severe abdominal pain, and in a few hours the temperature rose to 101·2° F., and the pulse to 120. No urine was passed until the fourth day after the injection, when 3 ounces were voided, but unfortunately this was not examined. No more urine was passed. On the fifth day a slight uriniferous odour was noticed in the breath. She became apathetic and gradually passed into coma, which terminated in death. At the necropsy the liver extended 4 centimetres below the costal margin. The heart was normal. The liver weighed 1565 grammes, and was soft and of doughy consistence and light-yellow colour. On section it was cloudy and the markings were rather indistinct. The kidneys weighed 175 (left) and 180 (right) grammes respectively, and were of a greyish-red colour. The capsule was thickened and stripped with slightly increased resistance, leaving a finely granular surface, on which were small irregular red areas. The cut surface was of a greyish-purple colour and very cloudy in appearance. The cortex was fairly well differentiated from the medulla, but considerably narrowed, and the glomeruli could be just seen. On microscopic examination the muscular fibres of the heart were slightly swollen and rather cloudy, but the striations were distinct. In some places there was marked fragmentation. The hepatic cells in the centre of the lobules were irregular in size and shape, ragged and indistinct, and showed fat vacuoles. In some the nuclei could scarcely be seen, and the protoplasm was granular. Many contained bright yellow pigment. Several cells showed mitotic figures and signs of division. Towards the periphery of the lobules the cells approached the normal type. The interlobular connective tissue was slightly increased. The kidneys showed considerable increase in the connective tissue. There was enormous desquamation of epithelium, especially in the convoluted tubes, which in all stages of degeneration filled the tubules. Throughout the kidney were irregular patches of polymorphonuclear leucocytic infiltration. The vessels were only slightly congested. Acute nephritis with anuria has been observed in many of the fatalities due to salvarsan. It has also been produced in experimental arsenical poisoning. Fatty changes in the liver cells as well as mitotic figures have also been produced in experimental arsenical poisoning. Evidently salvarsan and arsenic produce similar effects on the liver and kidney. Why salvarsan may be given with impunity so frequently and yet an ordinary dose prove fatal, as in this case, still remains a problem. The majority of the fatalities have followed a second injection, and anaphylaxis has been suggested as an explanation. But, as in the present case, this explanation cannot always be invoked. There was evidently chronic interstitial nephritis which may have predisposed to the acute nephritis.

AN ANCIENT SURGICAL OPERATION.

ONE of the most interesting studies in connexion with the evolution of the surgeon's art is the extraordinary similarity which may be found between the procedures of modern active practitioners and those that were apparently practised by their remote ancestors, for the native practitioner is a remarkably conservative type. The earliest form of splint known, discovered *in situ* on the body of an Egyptian of the Fourth Dynasty, finds its exact counterpart in that which is at present in everyday use among the barber surgeons of Upper Egypt. Many modern savage and semi-savage people perform surgical operations—and have done from time immemorial—that wholly surprise those who, following a rather prevalent mode of thought, regard the major operations of surgery as being of a very recent development. And yet surprise at the boldness of these operations should always be tempered by the reflection that the more primitive the state of society the greater the familiarity with the details of severe wounding and subsequent repair of the human body. Even the mutilations practised by many races for purely æsthetic reasons are operations of no mean magnitude, demanding some degree of skill and boldness from the operator and a deal of fortitude from the patient. One operation, that of trephining, has always proved a tempting theme to the student of the history of surgical procedures. It is an operation practised to-day among semi-barbarous peoples; it is one that leaves its imprint on the skeleton and so may be detected in remains of great antiquity, and it is one that, in some places, is so firmly impressed on the popular mind that it seems to tell its history of a once more popular practice. Hudson, of Redruth, and John Fletcher Home have been the historians of trephining in England; from America a mass of new material has come; and on the Continent Dr. Lucas-Championnière has studied the question in all its aspects. His latest publication on the subject[1] brings our knowledge of the history of trephining up to date, and adds a fund of interesting details culled by the author from his vast experience. Among the Kabyles Dr. Lucas-Championnière learned the lore from a recognised practitioner in whose family trephining was considered so much a matter of course that the man's father had submitted 12 times to the operation, and the son himself exhibited four palpable lesions in his own skull. Other peoples among whom the operation is

[1] Les Origines de la Trépanation Décompressive: Trépanation Néolithique, Trépanation pré-Colombienne, Trépanation des Kabyles, Trépanation traditionnelle. Paris: G. Steinheil. 1912.

almost equally customary are instanced, and especial reference is made to the practices of the Cornish miners described by Hudson. Among the preserved evidences of the antiquity of this operation the author describes and illustrates instances of Neolithic skulls and heads of Peruvian "mummies" said to have been trephined. There appears to be no doubt that some of these instances are true and brave examples of deliberate surgical attempts at opening the cranial cavity for curative purposes; but great caution is necessary in the examination of any case in which an ancient skull presents those appearances which are suggestive of trephining. The results of depressed fractures, and more or less circular patches of ulceration from pressure or from scalp sores produce appearances strikingly like those of a trephine wound. Slices cut from the curved surface of the skull by the passage of an instrument such as a sword also cause wounds easy to mistake for the circular outline familiar in examples of deliberate cranial surgery. Then, again, it must be remembered that, in the case of wounds of Neolithic age, the very weapons in common use were such as inflicted extremely deceptive injuries, the stone mace-head being an admirable instrument for removing a circular piece of bone from the skull. Such cautions are necessary, for the temptation to discover the traces of ancient surgical procedures has at times led to a too ready acceptance of altogether insufficient evidence. Many imagine that it is common to meet with the wounds of the trephine in the skulls of ancient Egyptians, and yet no ancient Egyptian skulls show wounds for which some much more commonplace explanation is not readily found. That the operation is by no means employed only in cases of definite fracture, or even of injury, is made abundantly clear by Dr. Lucas-Championnière, and it is quite possible that many different conditions have been subjected to the earliest of all man's efforts to treat the human brain.

UNIFORMITY IN PUBLIC HEALTH REPORTS.

THE subject of uniformity in medical reprints, which was raised by Dr. Blair Bell in our columns on Oct. 5th last, calls up the kindred subject of uniformity in public health reports. That this has some importance, which makes an

A pile of London public health reports.

effort at standardisation worth attempting, is illustrated by a photograph sent to us by a medical correspondent, a reproduction of which is shown below. The illustration is of a pile of annual reports of the medical officers of health of the various metropolitan borough councils. The volumes are as received, except that the names have been painted on the backs for convenience of reference. The outward and visible signs must not be taken as an expression of any inward variation in the excellence of public health administration in London, but the differing sizes of the volumes makes all arrangement upon shelves impossible.

THE appointment of a whole-time medical officer of health for the City of London, at a salary of £1000 per annum, in succession to Dr. William Collingridge, who is retiring, will shortly be made. The selection of candidates will in the first place be undertaken by the sanitary committee of the Corporation of London on Dec. 12th.

THE Home Office has appointed Mr. Charles Alfred Ballance, surgeon to St. Thomas's Hospital, to be chief surgeon of the Metropolitan Police, in place of the late Mr. Clinton Dent.

BY the kind invitation of the Lady Mayoress the annual meeting of the Royal Medical Benevolent Fund Guild will be held to-day, Friday, Nov. 1st, at 5 o'clock, at the Mansion House, the Lady Mayoress in the chair.

THE death took place at Leicester on Saturday last of Dr. Frank Montague Pope, who for nearly 26 years was honorary physician to the Leicester Infirmary. Dr. Pope, who was in his fifty-seventh year, had been ill for some three months.

THE MEMORIAL TO LORD LISTER.

A LARGE and highly important meeting was held at the London Mansion House on Thursday, Oct. 24th, for the purpose of raising a fund for the establishment of a memorial to Lord Lister. Sir THOMAS BOOR CROSBY, the Lord Mayor, presided.

Among those present were the Lord Chancellor, the Hon. G. W. Spencer-Lyttelton (representing Prince Alexander of Teck), Lord Cromer, Lord Avebury, Lord Kinnaird, Sir Archibald Geikie, Sir Donald MacAlister, the Dean of St. Paul's, the Dean of Westminster, Sir Rickman Godlee, Sir Thomas Barlow, Sir Francis Champneys, Professor Saundby, Sir Alfred Pearce Gould, Professor Howard Marsh (representing the Vice-Chancellor of Cambridge University), Sir William Osler (Oxford University), Vice-Chancellor of the University of Manchester, Vice-Chancellor of the University of Sheffield, Sir J. Wolfe Barry, Mrs. Garrett Anderson, Sir J. Bland-Sutton, Sir Victor Horsley, the Hon. W. F. D. Smith, the Editor of THE LANCET, Mr. F. Morris Fry, Sir W. Watson Cheyne (honorary treasurer), and Sir J. R. Rose Bradford (honorary secretary).

Messages of sympathy and regret for inability to be present at the meeting were read by the honorary secretary of the Memorial Fund, from, among others, the Archbishop of Canterbury, Mr. Balfour, and Sir James Whitehead, who enclosed a cheque for 100 guineas for the purposes of the meeting.

Sir THOMAS CROSBY opened the proceedings by a brief reference to Lord Lister's pre-eminence in the world of science, and was followed by Lord HALDANE, who, in the unavoidable absence of the Prime Minister, moved the following resolution:—

> That this meeting is of opinion that the priceless services of the late Lord Lister to the cause of science and the alleviation of human suffering should be commemorated by a suitable memorial.

He said that the Government attached great importance to the movement, adding that a distinguished foreign critic had recently observed that the British were a remarkable people. He said they were not good at organisation, and probably the average number of highly educated men was not so great among them as it was in some other countries; but, said this critic, they had the remarkable quality of pouring out a succession of extraordinary leaders of men from

the ranks of science and literature. Every now and then some man of especially outstanding prominence appeared, not merely among his own fellow countrymen, but in the world. Three such pre-eminently distinguished men were Darwin, Kelvin, and Lister. Lister gave to the world a discovery which had revolutionised the whole practice of surgery, and not only had that discovery opened up new fields in his own department of surgery, but had also been transferred to the science of medicine and had led to the conquest of tropical diseases, of plague, and of other maladies which resulted from the introduction into the human body of minute micro-organisms. Lister's splendid work was not done for one nation alone, but for humanity at large. All were his debtors from the humblest to the greatest, and perhaps the poor had benefited from his discovery even more than the rich. Therefore it was fitting that the meeting should assume a national aspect.

Sir ARCHIBALD GEIKIE, President of the Royal Society, who seconded the resolution, which was adopted, characterised Lord Lister as one of the greatest men of science in modern times, and said that the record of his patient and resourceful labours formed one of the most fascinating narratives in the history of science and in the chronicles of philanthropy.

Lord AVEBURY proposed a resolution supporting the scheme which had been adopted by the general committee appointed for the purpose of deciding what should be the form of the memorial—namely, a memorial in Westminster Abbey, to take the form of a tablet with medallion and inscription; the erection of a monument in a public place in London; the establishment of an International Lister Memorial Fund for the Advancement of Surgery, from which either grants in aid of researches bearing on surgery or awards in recognition of distinguished contributions to surgical science should be made irrespective of nationality. Passing in review the various great names in science, art, and literature of distinguished Englishmen who had added to the advancement and comfort of the world, he said that perhaps no profession had done so much as the great profession of medicine. Of Lister it could be said—and could more be said?—that no one, with the possible exception of Pasteur, had done so much to mitigate the sufferings of poor human nature.

Sir RICKMAN GODLEE, in seconding the resolution, explained the reasons which had induced the committee to decide on the placing of a medallion instead of a statue in the only remaining space in Westminster Abbey. The erection of a statue or sculptural group in a prominent part of London would appeal to the world at large, but it was felt that there should be a memorial of a more international character. Several plans were under consideration. One was to institute a number of scholarships for students. Another was to institute something of the nature of the Nobel prize. Another method of attaining the object was one that was more like that of the Carnegie Trust, which gave grants in aid to men of science and medical men, not only in their earlier years, but also later on to help them in paying the cost of work done and to be done. One plan which commended itself to the committee would enable the trustees to devote the interest of the fund at their discretion either to the promotion of research bearing upon the progress of surgery, or as awards in recognition of notable advances in this science.

The resolution having been carried, the Hon. W. F. D. SMITH moved a vote of thanks to the Lord Mayor and the proceedings terminated.

Donations should be sent to the Treasurers, Lister Memorial Fund, Royal Society, Burlington House, London, W.

ROYAL DENTAL HOSPITAL OF LONDON.—The annual dinner of the staff and past and present students will be held on Saturday, Nov. 23rd, at 7 P.M., at the Hôtel Métropole (Whitehall Rooms), under the presidency of Mr. J. Howard Mummery. Those who desire to be present are requested to communicate with the Dean at the Royal Dental Hospital, 32, Leicester-square, London, W.C. A dressing room will be provided at the hotel.

THE Academy of Sciences (Mathematical and Natural Science Department), Heidelberg, has granted Dr. Brodmann, of Tübingen, 15,000 marks (£750) for the completion and publication of his valuable researches on the cortex of the brain.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ANNUAL REPORT OF THE COUNCIL.

THE report of the Council of the Royal College of Surgeons of England, which is to be laid before the annual meeting of Fellows and Members at the College on Thursday, Nov. 21st, is now published. It deals with the work in the various departments of the College during the year ending August 1st, 1912.

National Insurance Act.

With reference to the resolutions passed at the last annual meeting the report states that the Council noted with pleasure that the meeting was in accord with the action taken by them in reference to the National Insurance Act. They again decided not to take any action in reference to the resolution affirming the desirability of admitting Members to direct representation on the Council. A proposal, which was also passed at the annual meeting, that in future the annual balance-sheet, as well as the statement of receipts and expenditure, should be published in the annual report of the Council to the Fellows and Members, was considered by the Council but was not carried.

Regarding the National Insurance Act the report contains the correspondence which passed between the National Health Insurance Commissioners and the College with regard to the holding of a Conference with representatives of the medical profession. The College was invited to appoint two members to attend the Conference, but the Council replied that they regretted they were not prepared to send representatives to the meeting suggested by the National Health Insurance Commissioners, and expressed the opinion that the administration of the medical benefits could not be carried out under the Act with due regard to the interests of the public and the welfare of the medical profession, and that no satisfactory arrangement could be arrived at without an amending Act. They, however, stated that they would be prepared to render any assistance in their power in the drafting of an amending Act for the provision of such amendments which they considered necessary to secure the coöperation of the medical profession.

Joint meetings with representatives of the Royal College of Physicians subsequently took place, and in March last a conference was held at the Royal College of Physicians, at which were present representatives of the Medical Faculties of the Universities of England and Wales, of the Royal College of Physicians, of the Royal College of Surgeons, and of the Society of Apothecaries (40 in all). A resolution was passed recommending the constituent bodies of the conference to sanction its formation as a joint committee, for watching the interests of the medical profession in regard to the Insurance Act, and considering alternative methods of attaining the objects of the medical portion of the Act. At a further meeting of this joint committee of the universities and medical corporations it was resolved:—

> That, in view of the gravity of the issue raised by the pledge circulated by the British Medical Association, this joint committee resolves to invite the members of the medical staffs of London hospitals to attend a conference in order that the matter may be fully discussed, and suggests that similar steps should be taken in the provinces.

This conference with the staffs of the London hospitals, held at the hall of the Royal Society of Medicine in June, was attended by more than 260 members, and the "pledge complementary to the undertaking of the British Medical Association" having been fully considered, it was decided by an overwhelming majority to support the pledge as drawn by the Association.

Licence in Dental Surgery.—Diploma in Public Health.

The report of the inspector of the General Medical Council on the final examination for the Licence in Dental Surgery granted by the College was referred by the Council to the Board of Examiners in Dental Surgery for consideration. In their remarks on the inspector's suggestions, which were submitted to the Council, the Board noted that in the inspector's opinion the Final Examination for the Licence was "sufficient," and was, moreover, "very thorough and practical." Certain suggestions were, however, made by the inspector, including a recommendation that candidates should be tested on extractions under an anæsthetic. It was pointed out

by the Board of Examiners that this has already been met by the decision of the Board to conduct to a limited extent a clinical examination on patients to be followed by extraction of teeth under "nitrous gas." In regard to a further recommendation that "the candidate's skill in impression-taking, bite-taking, and the clinical side generally of prosthetic dentistry" should be tested in the Final Examination, the Board were of opinion that it was unnecessary to test the candidates practically in this branch of their work at the Final Examination. The Board agreed with the inspector that the syllabus of the examination in surgery and surgical pathology needs revision, and with this object in view a committee of the surgical examiners of the Board was appointed "to consider whether any, and if so what, alterations are required in the syllabus of anatomy, physiology, and surgery." At a subsequent meeting of the Council the Board submitted a revised synopsis of surgery and surgical pathology, which was approved by the Council. The synopsis, which adds very little to the scope of the examination, but arranges the subjects more systematically, will come into force on May 1st, 1913. A communication from the deans of the four dental schools of London asking the College to so alter the regulations relating to the Diploma in Dental Surgery that the Preliminary Science Examination shall be passed by all candidates before they commence any portion of the work required for the Second Professional Examination, has been received by the Council, and this has been referred by them to the Dental Board for consideration.

The new rules of the General Medical Council in reference to Diplomas in Public Health have been considered by the Committee of Management of the two Royal Colleges. These rules are based on the recommendations of the Public Health Committee of the General Medical Council, modified in some respects as the result of reports by the various examining bodies, including the Royal Colleges. After consultation with the Examiners in Public Health it has been decided by the Royal Colleges to adopt the rules for their Diploma in Public Health with one exception—namely, that the period of six months' laboratory instruction be maintained instead of being reduced to four months as suggested by the General Medical Council. The total number of hours of laboratory work (240) is to be required in any case, but the Royal Colleges are of opinion that it is better that these 240 hours should be distributed over the longer period of six months.

Financial and Other Matters.

During the past year the entrance, museum, and inner halls of the College, and corridor to the common room, have been paved with marble. The College is indebted to the widow of a Member of the College, formerly in practice in the North of England, for this handsome and costly gift.

The gross income of the College for the past year amounts to £25,840, an increase of £137 on that of the previous year. The examination and diploma fees for the Membership, Fellowship, and Diploma in Public Health remain at nearly the same figure in each case, but there is an increase of £129 in the Licence in Dental Surgery. The Diploma in Tropical Medicine appears for the first time this year in the statement of accounts, the share of the fees received by the College amounting to £42. There is an increase of £60 in the amount received from the hire of rooms at the Examination Hall.

The expenditure in respect of revenue for the past year amounts to £23,769, an increase of £287. The amounts disbursed for examiners' fees and other expenses at the examinations vary very little from those recorded in the previous year. The general working expenses at the College are £210 less than in the previous year. The special expenses of the museum show an increase, amounting this year to £240. The largest item of expense is £519 for furniture and fittings. Included in this sum is a large part of the cost of the new stands for the pathological specimens now placed on the floor of Room III. The sum placed under catalogues and reports is also large. The special expenses of the library are £94 less than in the previous year. The extraordinary expenditure amounts to £1661, and includes a sum of £980 for the recently added Rooms VII. and VIII. of the museum. These rooms were formed by rebuilding the old house adjoining Room VI., formerly the official residence of the Librarian. The balance of income over expenditure in respect of revenue is shown to be £2071. The sum of £10,125 has been paid during the year on account of the new examination hall. The new building is now finished and has been occupied since May.

The number of diplomas issued during the past collegiate year shows an increase over that of the previous year, and includes: Membership, 376; Fellowship, 60; Licence in Dental Surgery, 100; Diploma in Public Health, 39; and Diploma in Tropical Medicine, 9.

The Conservator's annual statement regarding the museum, which was issued last June and was described in THE LANCET, June 22nd and July 6th, is included in the report, together with a full account of the donations made to the library. These latter included the manuscripts of the late Lord Lister, presented under the terms of his will by the President, and reprints of the late Sir Henry Trentham Butlin's lectures on Cancer, delivered at the College in the autumn of 1911, from Lady Butlin. The Lister papers have been catalogued by the Librarian, and form part of the collection including the Hunter, Owen, and Astley Cooper MSS. The card catalogue is nearing completion, and during the year the number of readers to the library has been 10,388.

During the year the deaths of two Honorary Fellows have been reported, together with 16 Fellows, 206 Members, and five Licentiates in Dental Surgery.

Fellows and Members can obtain copies of the report on application to the secretary, and can, if they so desire, have their names placed on the list of those to whom the report is sent annually. Motions to be brought forward at the meeting of Fellows and Members must be signed by the mover, or by the mover and other Fellows and Members, and must be received at the College not later than Nov. 11th.

MEDICINE AND THE LAW.

An Unsuccessful Claim for Negligence against a Dentist.

THE sheriff-substitute at Glasgow recently gave his decision in a case in which a domestic servant claimed damages against a dentist, alleging that while he was extracting three teeth from her upper jaw under gas he negligently allowed a portion of one of the teeth to fall into her larynx and thence into her right lung. In dealing first with the question of fact, whether a piece of a tooth escaped and entered the girl's lung during the operation, the sheriff-substitute pointed out that it was proved that she was sick after recovering from the anæsthetic, and that after she went home she became feverish and ill; that a medical man attended her, and that it did not occur to him while treating her that her symptoms were due to a foreign body in her lungs. She alleged, however, that more than a month after the operation, having suffered from a severe cough, she coughed up a quantity of blood and a piece of a tooth, the latter of which she showed to two fellow servants, to whom it appeared to be a piece of a tooth, and then threw into the fire. Spitting of blood had continued afterwards, and the sheriff-substitute discussed the possibility of this being due to tubercular disease or other causes not connected with the tooth, as to which there was no conclusive evidence. In conclusion, as to this part of the case he expressed himself as unable to say that there ever was a portion of a tooth in the girl's lung, and pointed out that the burden of proof was upon her, and that she had not discharged it. He also was of the opinion that if, in fact, any such thing did happen as alleged during the operation the defendant was not aware of it. Assuming the fact, however, in the pursuer's favour, and granting that a piece of a tooth slipped into the pursuer's larynx without the defender's knowledge, the sheriff-substitute turned to the question of law that would then arise as to the liability of the dentist on the ground of negligence. He pointed out that the mere happening of such an accident as that alleged would not be proof of such negligence. The dentist's duty was to act with a fair, reasonable, and competent degree of skill, and in this his position was similar to that of a medical practitioner, a lawyer, or an engineer. The sheriff-substitute, after commenting upon the delay of the pursuer in commencing legal proceedings, pointed out the hardship that this might have occasioned to a busy practitioner asked to recall an extraction of teeth taking place many weeks before and marked by no peculiar incident at the time of its occurrence. He then reviewed the evidence of the defender and his

assistant as to his practice upon such occasions and their recollection of the particular case. It so happened that they remembered all that had taken place within their observation, and their evidence proved that all proper precautions had been used. He further considered the question whether the symptoms following the extraction and preceding the patient's return to her home were such as should have led a prudent man to diagnose that a piece of the tooth had disappeared down her larynx. This, again, had not been proved, and the sheriff-substitute declared himself as coming unhesitatingly to the conclusion that no negligence had been established, and that the defender was entitled to be assoilzied, judgment being given for him with expenses and with a certificate for extra remuneration for Professor W. K. Hunter, who had given expert evidence. The defender is to be congratulated upon this satisfactory result, as is the Medical and Dental Defence Union of Scotland, which, represented by Messrs. Turnbull and Findlay, writers, conducted the case on his behalf.

Post-mortem Examination of a Hospital Patient.

The body of a workman who had died in St. Bartholomew's Hospital, Rochester, recently formed the subject of an inquest, at which the coroner expressed strong disapproval of the course adopted by a member of the medical staff of the hospital in making a post-mortem examination without the authority either of the coroner or of the relatives of the deceased. The patient had apparently sustained an accident involving a compound fracture of the leg while putting in new machinery at a paper-mill; the amputation of the limb was found to be necessary after he had been treated in the hospital; death followed the amputation after a short interval. In the opinion of the medical officer death was due to tuberculous enteritis and myocarditis, and he gave the relatives a certificate to that effect when the body was removed from the hospital. Before doing so he had made a post-mortem examination, without asking for or waiting to obtain the consent of the relatives. That the medical officer acted in perfect good faith, with the intention that thereby the conditions stated in the certificate should be beyond doubt correct, and in the belief that he was legally right in the course he took, we have no doubt at all. Unfortunately, however, to make a post-mortem examination in such circumstances was an act of, at any rate, doubtful legality, although we are not aware that legal proceedings of any serious description could be taken against the medical man. The legal position with regard to a dead body is not very clearly defined. No one has any property in it, but a right to possess it is recognised by the law, and an executor, where there is a will, or other person having "lawful possession" of it, may permit it to be dissected, under the Anatomy Act, 1832, subject to there being no known objection to that course expressed by the deceased during life or raised by near relatives. A post-mortem examination as distinct from a dissection for the purpose of study can, no doubt, be authorised by relatives having "lawful possession" of the body. To authorise or to make such an examination would, however, be wrong in a case where there was a likelihood of an inquest being held, because it would anticipate and interfere with the examination which it is the coroner's duty to order where one is required. In the case upon which we are commenting the certificate given might, no doubt, have enabled the body to be buried without an inquest, but an accident had happened causing the deceased to be taken to the hospital, his death had ensued, and it was to the interest of the dependents to establish that it was the accident that caused it, in order to secure compensation. Hence they naturally reported the matter to the coroner, and he acted perfectly correctly in holding an inquest. At that inquest the medical man appointed by the coroner to make a post-mortem examination put forward a different opinion from that held by the medical officer, upon which the jury founded a verdict that the deceased "died from myocarditis as the result of a compound fracture of the right leg sustained from an accident." The medical officer called attention to the fact that he had not been invited to attend at the second post-mortem examination. It would have been a fairer and more courteous course towards him if he had been given the opportunity of being present, but the fact that a post-mortem examination had been held by him in the hospital without any authority from anyone no doubt occupied the coroner's attention and prevented him from appreciating the justice of this complaint. In commenting upon what occurred on this occasion, we would suggest, for the guidance of medical practitioners connected with hospitals, that the status and rights of their patients are not materially affected by the reception in the wards of a charitable institution. If the deceased had died in the consulting room of the medical man referred to, or in a private nursing home under his control, the impropriety of making any dissection of his body without consulting the relatives, even for the perfectly proper object of ascertaining the precise conditions which caused or accompanied death, would probably have struck him at once. As the matter stood, the deceased died in a hospital to which he had been brought in consequence of an accident, so that an inquest was practically and rightly inevitable. An inquest is held upon such an occasion, even if it only have for its possible result the dissociation of the death from the accident, involving as this would do the public exoneration of any person who otherwise might be regarded as responsible.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

County Borough of Eastbourne.—Dr. W. G. Willoughby's report for 1911 is a record of much careful and well-organised administration. He complains, however, that his staff is insufficient for the work which has to be done, and he is evidently in need of the services of the fourth sanitary inspector who was dispensed with in 1910. Eastbourne has been noted for many years for the completeness with which isolation of the notifiable infectious diseases in hospital has been carried out, but the record was reached in 1911, when of 196 cases of scarlet fever, diphtheria, and enteric fever all but one doubtful case of enteric fever were removed to the isolation hospital. This speaks well for the popularity of the hospital, and is due no doubt to its satisfactory equipment and administration. There is accommodation for 62 beds in seven permanent pavilions, and although some of these are reserved for the needs of the numerous private schools in Eastbourne, the whole administration rests with the town council. There are also 17 beds in an iron temporary building for use in emergencies, and Dr. Willoughby reports an interesting though disappointing experiment in connexion with the use of this building as a sanatorium for pulmonary tuberculosis. Notice was sent to medical men explaining that the accommodation which was available was not intended for Poor-law cases or for advanced cases of the disease, and that only small charges would be made, but the result was that only four cases were sent by medical practitioners, and two of these were advanced cases. Other ten patients were eventually admitted, but these were found by the assistant school medical officer in the course of his medical inspection of school children. The explanation offered by Dr. Willoughby that early cases do not come to the knowledge of medical men seems scarcely sufficient to account for the extraordinarily meagre result of this experiment. Perhaps if it could have been prolonged—unfortunately the building was required for scarlet fever cases after three months—more satisfactory results might have followed.

Urban District of Beckenham.—Like many other districts, the Census population of Beckenham proved to be considerably less than that estimated on the basis of the two previous enumerations. The last Census return shows also a reduction in the average number of inmates per house, from 5·58 to 4·54, but Dr. J. M. Clements sounds a note of warning that this may not mean a real increase of cubic space per person, owing to the practice of converting a single two-storeyed dwelling of six to seven rooms into two separate dwellings, with separate entrances and numbers, one dwelling being on the ground floor and the other on the first floor. This practice is probably not confined to Beckenham, and may lead to fallacious inferences from the Census returns of persons per house elsewhere. It is unusual to find cancer heading the list of causes of death, but this was the case in Beckenham in 1911, as well as in 1910, deaths from

this cause having been actually more numerous even than those ascribed to tuberculosis, the various forms of diarrhœa or diseases of the chest. The record was reached in 1911, the cancer death-rate being as high as 1·35 per 1000 of the total population, and 4·2 per 1000 of the population aged 35 and upwards. It is satisfactory to record that notwithstanding the heat of 1911 infantile mortality reached only 75 per 1000 births, and it is evident that good work is being done by the health visitor in connexion with the Notification of Births Act. There is much useful information in Dr. Clements's report in relation to return cases of scarlet fever, diphtheria carriers, the use of antitoxin as a prophylactic, measles, and tuberculosis in cattle, which will well repay perusal.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In the 95 largest English towns, with an aggregate population estimated at 17,639,881 persons at the middle of this year, 8206 births and 4517 deaths were registered during the week ending Oct. 26th. The annual rate of mortality in these towns, which had steadily increased from 11·0 to 14·2 per 1000 in the six preceding weeks, declined to 13·4 per 1000 in the week under notice. During the first four weeks of the current quarter the mean annual death-rate in these 95 towns averaged 13·4 per 1000, against 14·9 per 1000 in London during the same period. The death-rates last week in the several towns ranged from 4·9 in Gillingham, 5·2 in Blackpool, 6·4 in Wimbledon, 6·9 in Acton and in Ilford, and 7·2 in Enfield, to 18·5 in Sunderland, 18·6 in Preston, 18·8 in Salford, 22·7 in Tynemouth, and 24·0 in Middlesbrough.

The 4517 deaths from all causes were 283 fewer than the number in the previous week, and included 421 which were referred to the principal epidemic diseases, against numbers rising from 310 to 426 in the four preceding weeks. Of these 421 deaths, 189 resulted from measles, 103 from infantile diarrhœal diseases, 48 from diphtheria, 40 from whooping-cough, 21 from scarlet fever, 20 from enteric fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases last week was equal to 1·3 per 1000, against 1·2 and 1·3 in the two preceding weeks. The deaths attributed to measles, which had steadily increased from 67 to 169 in the four preceding weeks, further rose to 189 last week, and caused the highest annual death-rates of 1·4 in Grimsby and in Newcastle-on-Tyne, 1·7 in Sheffield and in Rhondda, 1·9 in Dewsbury, 2·0 in Liverpool and in Barnsley, 2·3 in West Ham, 2·9 in Middlesbrough, and 7·0 in Tynemouth. The deaths of infants under 2 years of age referred to diarrhœa and enteritis, which had been 153, 129, and 121 in the three preceding weeks, further declined to 103 last week, and included 24 in London, 13 in Liverpool, 8 in Manchester, 7 in Birmingham, 4 in Bolton, and 4 in Salford. The fatal cases of diphtheria, which had been 43, 56, and 49 in the three preceding weeks, were 48 last week; 13 deaths were registered in London, 5 in Stoke-on-Trent, and 4 each in Portsmouth, in Birmingham, and in Manchester. The deaths attributed to whooping-cough, which had been 29, 33, and 36 in the three preceding weeks, further rose to 40 last week, and included 7 in London and 3 each in West Ham, in Liverpool, in Salford, and in Sheffield. The deaths referred to scarlet fever, which had increased from 17 to 29 in the four preceding weeks, fell to 21 last week; of this number 5 were recorded in Manchester and 3 in Middlesbrough. The fatal cases of enteric fever, which had been 20, 11, and 22 in the three preceding weeks, were 20 last week, and included 4 which occurred in London.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had steadily risen from 1512 to 2217 in the nine preceding weeks, had further increased to 2258 on Saturday last; 283 new cases of this disease were admitted to these institutions during the week, against 317, 322, and 345 in the three preceding weeks. These hospitals also contained on Saturday last 909 cases of diphtheria, 529 of measles, 242 of whooping-cough, and 55 of enteric fever, but not one of small-pox. The 1226 deaths from all causes in London were 227 fewer than the number in the previous week, and were equal to an annual death-rate of 14·1 per 1000. The deaths referred to diseases of the respiratory system, which had steadily risen from 103 to 327 in the six preceding weeks, declined to 239 last week, but were 29 in excess of the number recorded in the corresponding week of last year.

Of the 4517 deaths from all causes in the 95 towns last week, 103 resulted from different forms of violence, and 341 were the subject of coroners' inquests. The causes of 35, or 0·8 per cent., of the total deaths registered were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in its 14 suburban districts, in Manchester, Sheffield, Leeds, Bristol, Bradford, Newcastle-on-Tyne, Nottingham, and in 56 other smaller towns. The 35 uncertified causes of death last week included 10 in Birmingham, 5 in Liverpool, 3 in Preston, 2 in Stoke-on-Trent, 2 in Rochdale, and 2 in Sunderland.

HEALTH OF SCOTCH TOWNS.

In the 18 largest Scotch towns, with an aggregate population estimated at 2,182,400 persons at the middle of this year, 1097 births and 603 deaths were registered during the week ending Saturday, Oct. 26th. The annual rate of mortality in these towns, which had been 12·2, 14·1, and 13·6 per 1000 in the three preceding weeks, rose to 14·4 per 1000 in the week under notice. During the first four weeks of the current quarter the mean annual rate of mortality in these Scotch towns averaged 13·6 per 1000, against 13·4 per 1000 in the 95 large English towns. Among the several Scotch towns the annual death-rates last week ranged from 6·5 in Clydebank, 7·6 in Partick, and 8·8 in Motherwell, to 19·3 in Dundee, 20·2 in Perth, and 21·3 in Greenock.

The 603 deaths from all causes were 35 in excess of the number in the previous week, and included 43 which were referred to the principal epidemic diseases, against 59 and 32 in the two preceding weeks. Of these 43 deaths, 16 resulted from infantile diarrhœal diseases, 12 from diphtheria, 8 from whooping-cough, 4 from scarlet fever, and 3 from small-pox, but not one from measles or from enteric fever. These 43 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·0 per 1000, against 1·3 in the 95 large English towns. The deaths of infants under two years of age attributed to diarrhœa and enteritis, which had been 15, 28, and 10 in the three preceding weeks, rose to 16 last week, and included 6 in Glasgow, 3 in Dundee, and 2 in Govan. The deaths referred to diphtheria, which had increased from 5 to 11 in the five preceding weeks, were 12 last week; 5 deaths occurred in Glasgow, 3 in Aberdeen, and 2 in Edinburgh. The fatal cases of whooping-cough, which had been 4, 11, and 6 in the three preceding weeks, rose to 8 last week, and comprised 7 in Glasgow and 1 in Edinburgh. The 4 deaths attributed to scarlet fever were equal to the average in the five preceding weeks; the 3 deaths referred to small-pox were recorded in Kirkcaldy.

The deaths referred to diseases of the respiratory system in the 18 Scotch towns, which had been 62, 80, and 102 in the three preceding weeks, further rose to 105 last week; 29 deaths were attributed to different forms of violence, against 30, 34, and 23 in the three previous weeks.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an aggregate population estimated at 1,154,150 persons at the middle of this year, 574 births and 393 deaths were registered during the week ending Oct. 26th. The annual rate of mortality in these towns, which had been 15·5, 17·6, and 16·5 per 1000 in the three preceding weeks, rose to 17·8 per 1000 in the week under notice. During the first four weeks of the current quarter the mean annual death-rate in these Irish towns averaged 16·9 per 1000; in the 95 large English towns the corresponding death-rate did not exceed 13·4, while in the 18 Scotch towns it was equal to 13·6 per 1000. The annual death-rate in the several Irish towns last week was equal to 18·3 in Dublin (against 14·1 in London), 16·8 in Belfast, 23·1 in Cork, 14·0 in Londonderry, 35·2 in Limerick, and 26·6 in Waterford, while in the remaining 16 smaller towns the mean death-rate did not exceed 12·0 per 1000.

The 393 deaths from all causes in the 22 Irish towns

were 28 in excess of the number in the previous week, and included 39 which were referred to the principal epidemic diseases, against 45 and 43 in the two preceding weeks; of these 39 deaths, 19 resulted from measles, 6 from scarlet fever, 5 from diarrhœal diseases, 4 from diphtheria, 3 from whooping-cough, and 2 from enteric fever, but not one from small-pox. These 39 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·8 per 1000; the death-rate from these diseases last week in the 95 large English towns was equal to 1·3, while in the 18 Scotch towns it did not exceed 1·0 per 1000. The deaths attributed to measles, which had steadily increased from 1 to 20 in the seven preceding weeks, were 19 last week, and comprised 11 in Limerick, 7 in Belfast, and 1 in Dublin. The deaths referred to scarlet fever, which had been 3, 4, and 1 in the three preceding weeks, rose to 6 last week, and included 2 in Dublin and 2 in Dundalk. The fatal cases of diarrhœa and enteritis, which had been 13, 13, and 14 in the three preceding weeks, declined to 5 last week, all of which related to infants under 2 years of age; 4 deaths were registered in Dublin and 1 in Clonmel. The 4 deaths referred to diphtheria were slightly in excess of the average in recent weeks, and included 2 in Dublin. The 3 deaths attributed to whooping cough were equal to the number in the previous week, and were recorded in Dublin, Ballymena, and Clonmel respectively. Of the 2 fatal cases of enteric fever, which corresponded to the average in the six preceding weeks, 1 occurred in Dublin and 1 in Clonmel.

The deaths referred to diseases of the respiratory system in the 22 Irish towns, which had been 49, 70, and 76 in the three preceding weeks, further rose to 78 in the week under notice. Of the 393 deaths from all causes, 138, or 35 per cent., occurred in public institutions, and 5 resulted from different forms of violence. The causes of 7, or 1·8 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 95 large English towns the proportion of uncertified causes of death last week did not exceed 0·8 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet-Surgeon A. X. Lavertine to the *Aboukir*, and for group of ships of the Third Fleet. Staff-Surgeon S. Roach to the *Royal Arthur*.

Deputy Surgeon-Generals: W. W. Pryn to Gibraltar Hospital and J. L. Smith to Chatham Hospital. Fleet-Surgeon: D. J. P. McNabb to the Medical Department, Admiralty.

ROYAL ARMY MEDICAL CORPS.

The undermentioned Captains to be Majors (dated Oct. 29th, 1912): Mervyn W. Falkner, Richard N. Woodley, Edward E. Parkes, Reginald V. Cowey, Frederick E. Rowan-Robinson, John S. Bostock, Arthur H. McN. Mitchell.

Captain Robert M. Ranking retires, receiving a gratuity (dated Oct. 26th, 1912).

Colonel E. H. L. Lynden-Bell has taken up the appointment of Assistant Director of Medical Services in the London District.

Lieutenant-Colonel M. O'Halloran has been appointed Senior Medical Officer of the Coast Defences in the Scottish Command. Lieutenant-Colonel R. J. W. Mawhinny has embarked for a tour of service in India. Lieutenant-Colonel J. M. F. Shine has been transferred from the Military Hospital at Jersey, Channel Islands, to the Belfast District for duty. Lieutenant-Colonel M. J. Sexton, commanding No. 22 Company of the Royal Army Medical Corps at Wynberg Military Hospital, has been selected for the higher rate of pay under Article 317 of the Royal Warrant. Lieutenant-Colonel J. J. Gerrard, medical inspector of recruits in the Northern Command, has been appointed Senior Medical Officer in the Sierra Leone Protectorate. Lieutenant-Colonel J. Girvin has taken up duty in charge of the Military Hospital at Ahmednagar. Lieutenant-Colonel J. S. Green, in charge of the Military Hospital at Bangalore, has been selected for appointment as Senior Medical Officer on board the transport s.s. *Plassy*, which leaves Bombay for Southampton on Nov. 7th.

Major G. A. T. Bray has been appointed to hold Charge of the Military Hospital at Canterbury. Major H. K. Palmer has been transferred from the Military Hospital at Belgaum to the Third (Lahore) Division of the Northern Army in India. Major L. L. G. Thorpe has taken up duty at the Military Hospital, Tidworth, Salisbury Plain, on transfer from Cosham. Major L. Humphry has been transferred to the Home Establishment from India on the termination of his leave of absence, tour expired. Major H. Ensor, D.S.O., has been appointed to the Eastern Command for duty on reversion from the seconded list of officers serving with the Egyptian Army. Major F. Kiddle has been selected for appointment as Specialist in Ophthalmology to the Colchester District, Eastern Command, in succession to Captain R. C. Wilmot, transferred to the School of Musketry at Hythe. An exchange on the roster for service abroad has been approved between Major F. W. Hardy, specialist sanitary officer, North of Thames Area, Eastern Command, and Major E. Brodribb serving at Shorncliffe; the former officer will embark for a tour of service with the Northern Army in India. Major R. C. Lewis has taken up duty at Gibraltar.

Captain E. Ryan has been selected for appointment to hold charge of the Louise Margaret Hospital at Aldershot. Captain R. S. Smyth has been transferred to the Home Establishment on the termination of his leave of absence from India, tour expired. Captain E. G. Anthonisz has been transferred from Battray Camp to Belfast. Captain T. B. Unwin has joined the London District for duty on the expiration of his leave of absence. Captain T. S. Blackwell has taken up duty at the Military Hospital, Athlone, on transfer from Mullingar. Captain J. A. Bennett has been granted three months' leave of absence home from India. Captain A. H. McN. Mitchell has joined the Military Hospital at Tidworth on transfer from the Royal Victoria Hospital, Netley. Captain D. S. B. Thomson has arrived home on leave of absence from Egypt. Captain A. H. Bond has been appointed to the Irish Command for duty. Captain C. M. Rigby has been selected for appointment as Embarkation Medical Officer at Bombay. Captain A. L. Fortescue, commanding the Military Hospital at Benares, has been appointed to hold charge of the Cantonment General Hospital, and to assume temporary medical charge of the 62nd Regiment of Punjabis during the absence of Lieutenant H. E. Short, I.M.S., at Delhi. Captain A. W. Sampey has been appointed a Specialist in the Prevention of Disease and placed in charge of the Headquarters Brigade Bacteriological Research Laboratory at Fyzabad. Captain F. C. Lambert has been transferred from Brackenbir Moor to Liverpool. Captain E. Potts has taken up duty in the Dublin District on transfer from Dollytown. Captain M. D. Ahern has been placed under orders for a tour of service in Bermuda during the ensuing trooping season. Captain W. K. Beaman has arrived home on leave of absence from Malta. Captain J. T. McEntire has embarked for a tour of service in the Sierra Leone Protectorate. Captain R. K. White has been selected for appointment as Specialist in Midwifery and Diseases of Women and Children to the Aldershot Command. Captain D. H. C. MacArthur has been granted eight months' general leave of absence home from India. Captain H. E. Priestly has been transferred from the Military Hospital at Tidworth, Salisbury Plain, to Parkhouse.

Lieutenant A. P. O'Connor has taken up duty at Cairo on transfer from the Military Hospital at Shorncliffe. Lieutenant W. L. Webster has been transferred from Tipperary to the Military Hospital at Cork. Lieutenant C. H. Stringer has been appointed Medical Officer in Charge of Rollestone Camp, Salisbury Plain. Lieutenant E. L. Fyffe has been appointed Anæsthetist to the Military Hospital at Cork. Lieutenant C. Robb has joined the Public Health Department in Egypt. Lieutenant W. S. R. Steven has been placed under orders for a tour of service with the Fourth (Quetta) Division of the Northern Army in India, embarking during the ensuing trooping season. Lieutenant E. T. Gaunt has embarked for a tour of service at Malta. Lieutenant J. M. Elliott has joined the Military Hospital at Hilsea. Lieutenant W. T. Graham has been transferred from Rollestone Camp to Durrington. Lieutenant W. W. Treves has taken up duty at the Military Hospital, Cairo, on transfer from Chatham.

INDIAN MEDICAL SERVICE.

The King has approved of the promotion from Lieutenant to Captain of Sureswar Sarkar (dated June 4th, 1912). The

King has also approved of the retirement of Captain Roderick Dear MacGregor (dated Oct. 28th, 1912).

Surgeon-General A. M. Crofts, C.I.E., has taken up duty at Murree as Deputy-Director of Medical Services to the Second (Rawal Pindi) Division.

Lieutenant-Colonel B. H. Deare has been appointed a member of the Board of Management of the Albert Victor Asylum for Lepers at Gobra in succession to Lieutenant-Colonel J. T. Calvert, resigned. Lieutenant-Colonel W. J. Buchanan, Inspector-General of Civil Prisons in Bengal, has been granted three months' leave of absence. Lieutenant-Colonel S. E. Prall has been granted an extension of his leave of absence.

Major C. C. Murison has taken up duty as Deputy Sanitary Commissioner of the Gujarat Registration District, vice Major T. Jackson. The services of Major G. Bidie have been replaced at the disposal of H.E. the Commander-in-Chief in India. Major W. H. Cox, D.S.O., has been appointed Superintendent of the Lunatic Asylum at Rangoon, in succession to Captain J. Shaw, transferred as Superintendent of the Yeravada Lunatic Asylum at Poona. Major W. G. Richards has arrived home on leave of absence from India. H.E. the Governor of Bombay in Council has been pleased to appoint Major H. Bennett to officiate as Deputy Sanitary Commissioner in the Sind Registration District in addition to his own duties during the absence on leave of Major W. O'S. Murphy. Major E. V. Hugo, Professor of Surgery at the Government Medical College, Lahore, has taken up duty as Professor of Ophthalmic Surgery in addition to his own duties during the absence on leave of Major H. Ainsworth. Major L. P. Stephen has been appointed to do duty as Civil Surgeon at Nasik, in succession to Captain A. J. V. Betts, proceeding on leave of absence.

Captain N. N. G. C. McVean has arrived home on leave of absence from India. Captain T. C. Rutherford, civil surgeon at Bilaspar, has been placed on duty at Amritsar in connexion with the prevention of malarial fevers. Captain E. T. Harris has been appointed to the Civil Medical Charge of the Ruby Mines District in Burma in succession to Major C. C. S. Barry, proceeding on leave. The services of Captain I. M. Macrae have been placed permanently at the disposal of the Government of the United Provinces of Agra and Oudh for employment in the Jail Department. Captain V. B. Nesfield, officiating civil surgeon at Bijnor, has been granted two months' privilege leave of absence. The services of Captain L. Cook have been placed at the disposal of the Government of Bihar and Orissa. Captain T. H. Gloster has been placed on special duty under the orders of the Director-General of the Indian Medical Service. Captain R. L. Gamlen has been granted three months' extension of his leave of absence on medical certificate. Captain A. W. C. Young has taken up duty at Delhi as Medical Officer of Health. The services of Captain H. M. Browne, officiating sanitary commissioner in Bengal, have been replaced at the disposal of the Government of India in the Education Department. Captain A. J. V. Betts has been granted 18 months' leave of absence combined with furlough home from India.

Lieutenant C. H. Smith has been selected for appointment as Specialist in Advanced Operative Surgery.

Territorial Force.

Royal Army Medical Corps.

2nd South-Western Mounted Brigade Field Ambulance, Royal Army Medical Corps: Lieutenant John R. Benson to be Captain (dated Oct. 1st, 1912).

2nd Home Counties Field Ambulance, Royal Army Medical Corps: Lieutenant George T. Willan to be Captain (dated Oct. 3rd, 1912).

3rd East Lancashire Field Ambulance, Royal Army Medical Corps: Captain Wilfrid M. Steinthal to be Major (dated Sept. 14th, 1912).

3rd North Midland Field Ambulance, Royal Army Medical Corps: Joseph Cecil Harris to be Lieutenant (dated Oct. 1st, 1912).

1st Welsh Field Ambulance, Royal Army Medical Corps: Lieutenant Patrick J. McGinn to be Captain (dated July 21st, 1912).

Attached to Units other than Medical Units.—Lieutenant George E. J. A. Robinson to be Captain (dated April 8th, 1912). Lieutenant Charles H. Allen to be Captain (dated May 17th, 1912). Lieutenant Francis L. A. Greaves to be Captain (dated August 17th, 1912). Lieutenant Percy C. P. Ingram to be Captain (dated Sept. 30th, 1912). Lieutenant Frederick W. Higgs to be Captain (dated Oct. 1st, 1912).

Royal College of Surgeons in Ireland Contingent, Senior Division, Officers Training Corps: Lieutenant John Campbell, Royal Army Medical Corps, Special Reserve, is appointed to serve with the Contingent (dated Oct. 30th, 1912).

"The Military Surgeon."

In the October number Captain L. C. Duncan, Medical Corps, U.S. Army, continues his medical history of the Civil War, relating what occurred at the battle of Chickamauga, Sept. 19th and 20th, 1863. The Northern Army fought in a very awkward position, with its base of supply, and consequently its line of retreat, not behind it, but on its left flank. Then the division hospitals were not posted behind their divisions; most of them were pitched close to some springs (in those days every wound was washed before it was dressed), and the springs were on the extreme right of the line. The inconvenience of this faulty stationing of the hospitals is well brought out. A man of the centre divisions when wounded had to be carried three miles to hospital and then back along that road three miles before he could reach the base: six unnecessary miles. There were plenty of ambulances, four-wheeled, each carrying two men lying down, and of these one for every 110 men. In the army of 44,000 men there were some 12,000 casualties—2000 (4½ per cent.) killed and 10,000 (23 per cent.) wounded. The Confederate forces lost 16,000 men; their wounded suffered afterwards from hospital gangrene, due to their conveyance in uncleaned horse-trucks. Shell wounds in that day "baffled, even terrified, the surgeon." Lieutenant G. B. Foster gives an account of the equipment and work of the Division Field Laboratory of which he took charge in Texas. He found 26 soldiers infected with hook-worm disease. Medical-Director Frank Anderson, U.S. Navy, reports an outbreak of food poisoning at San Francisco; 2500 people were at a picnic, 1000 sickened, two died, and the cause assigned was B. enteritidis infection of beef from which sandwiches were made. Lieutenant R. H. Goldthwaite, Medical Corps, U.S. Army, reports the cure of a severe case of malaria (æstivo-autumnal) by the intravenous injection of 9 grains of salvarsan. There are some interesting remarks on the Russian Army in 1909. It numbered 1,260,220 men, of whom 4449 died from disease. Anthrax still occurs, and is ascribed to the wearing of sheep-skin coats. Newly raised recruits are quarantined, their hair and beards are clipped, they are bathed, and then given fresh clothing. By games, choirs, cinematographs, &c., men are sought to be kept in barracks, out of the public-houses of garrison towns. In a review of von Oettingen's "Manual of Practical Military Surgery in the Russo-Japanese War," the reviewer, from his personal experience, strongly supports the practice of securing dressings by mastic solution, so that bandages are not required. Minute instructions are issued to the United States Army for the measurement, by company commanders personally, of the feet of soldiers, and for the fitting of the men's shoes. A soldier to whom new shoes are issued just before a march is to stand in his new shoes for five minutes in 2½ inches of water to soften the leather, and then to walk about in them for an hour on a level surface, letting the shoes dry on his feet, that the shoes may become "molded" to them. When he takes the shoes off he is to rub neat's-foot oil into them. New socks, neither darned nor in holes, are to be worn in marching. Company commanders of infantry are personally to inspect the bare feet of their men before a march is undertaken, and will personally see to it that the men wash their feet daily after reaching camp, prick blisters and cover them with zinc oxide plaster, applied hot.

The late Dr. Busteed.

An appeal is being made for funds to establish a memorial to the memory of Brigade-Surgeon H. E. Busteed, formerly of the medical service of the Honourable East India Company. His researches into the history of "Old Calcutta" brought again to life a crowd of interesting figures which once trod that famous stage. Contributions will be gladly received in England either by Sir James Bourdillon, Westlands, Liphook, or by Messrs. Richardson and Co., 25, Suffolk-street, Pall Mall; and in India by Messrs. Grindlay and Co., Calcutta.

THE RED CROSS SOCIETY.

Two units of the British Red Cross Society for service in Greece left England on Oct. 27th, when Admiral H.S.H. Prince Louis of Battenberg, Princess Louise of Battenberg, and their daughter were present to bid the party farewell. The units are under the command of Colonel Charles Delmé Radcliffe, and previous to departure received the following Royal message, which was read by Sir Frederick Treves:—

> Please express to Colonel Delmé Radcliffe and other members of the Red Cross Expedition my earnest hope for their welfare in the noble and humanitarian work upon which they are now engaged.
> (Signed) ALEXANDRA.

Queen Alexandra has forwarded a subscription of £100 to the British Red Cross Fund.

Three medical and surgical units, raised and equipped by the British Red Cross Society for service in Turkey, each unit consisting of 15 men and three surgeons, left Charing Cross station on Oct. 29th for the seat of war.

The King has given His Majesty's Royal licence and authority to accept and wear the decoration of the Third Class of the Imperial Ottoman Order of the Medjidieh to Major Howard Ensor, D.S.O., R.A.M.C., which has been conferred upon him by His Highness the Khedive of Egypt, in recognition of valuable services rendered.

Mr. S. Osborn, ex-Master of the Haberdashers' Company and Commissioner of the City of London Boy Scouts, has left London for Constantinople to assist in the distribution of relief to the destitute women and children and to render aid to the sick and wounded at the front.

Correspondence.

"Audi alteram partem."

WHAT IS A LOOSE SEMILUNAR CARTILAGE?

To the Editor of THE LANCET.

SIR,—In the interesting paper on injuries to the semilunar cartilages in THE LANCET of Oct. 19th, p. 1067, Dr. A. M. Martin states that 95·5 per cent. of his series of cases (numbering no less than 449) showed *definite splits and tears*. The remainder showed no definite pathology and Dr. Martin presumes they were what the text-books term "loose cartilages." He does not explicitly state whether he himself accepts such "loose cartilages" as an actual pathological fact, but the implication of his statement is rather to discredit their existence. If so, I should like to express my entire agreement with him. As I have practised for many years in a part of the country largely devoted to the two great national industries which are responsible for so many injured semilunar cartilages—namely, coal-mining and football—I have had opportunities of operating on a large number of them and I have taught for many years that *there is no such thing as a loose semilunar cartilage apart from a definite split or tear*. Indeed, I find it difficult to conceive in what way either semilunar cartilage can be "loosened" without a rupture, partial or complete, of its attachments to the tibia or to the lateral ligaments. The truth is, as Dr. Martin's paper clearly shows, that tearing or splitting of the semilunars is in all cases a definite and demonstrable lesion, caused by a definite and generally violent wrench of the knee at a particular time. Subsequent use of the knee may increase or modify the effects of the initial lesion and give rise to attacks of recurrent synovitis, pain, and so forth, in which the history of the original injury may be obscured if not carefully inquired into. Hence it is of the utmost importance to ascertain in every case of traumatic derangement of the knee an accurate history of the first beginning of trouble. If there is a clear history of a definite twist or wrench of some severity at the very beginning of the trouble the operation will generally disclose a definite rupture of one or other cartilage. If there is only a vague history that the patient thinks he sprained the knee, or if he cannot date the occurrence, the surgeon may be confident that whatever else he may find in the joint it will not be a torn cartilage, nor will such a case be properly described as a "loose cartilage."

In my experience most of such cases are not purely traumatic in their origin, and trauma only plays a secondary and late part in their pathology. The common use of the misleading term "loose cartilage" is responsible for much confusion and doubt as to the best method of treatment. My own experience agrees entirely with Dr. Martin's as regards the results of the operative treatment of genuine torn semilunar—viz., that they are uniformly lasting and perfect as regards function of the knee. On the other hand, no one acquainted with the anatomy of the knee and of the semilunar cartilages can believe that spring pads and similar devices can keep a loose cartilage in its place, nor can anyone who has examined a genuine split cartilage imagine that it is possible by any means short of removal to prevent the detached portion from becoming nipped by the condyle. In short, for a genuine split or torn cartilage there is only one cure, and that is by operation. Splints and retentive apparatus of various kinds are merely palliatives suitable for those who for age or other reason are content with an imperfect cure.

I am, Sir, yours faithfully,

Wolverhampton, Oct. 22nd, 1912. EDWARD DEANESLY.

IPECACUANHA AND EMETINE.

To the Editor of THE LANCET.

SIR,—Lieutenant-Colonel Rogers's valuable paper on Amœbic Colitis in India reopens the question of the relative values of ipecacuanha and emetine, and it is interesting to note that until Veddes demonstrated the germicide powers of the alkaloid[1] our knowledge of the therapeutic value of ipecacuanha remained very much as it was in 1648, when Dr. William Pison, of Leyden, introduced the drug into Europe, and told of its antidysenteric properties, which he had seen in Brazil during the Viceroyalty of Count J. Maurice, of Nassau. The successful use of the drug by Pison, "The Founder of Tropical Medicine," in Amsterdam attracted the notice of his fellow countryman, Jean Adrian Helvetius, then living in Paris, who obtained a supply of the drug from one Garnier. Helvetius sold the powdered root as a secret medicine, and advertised it as an infallible remedy for dysentery. He was so fortunate as to cure the Dauphin of France and to secure from King Louis XIV. 1000 louis d'or for his secret. In the same year in which Sertürner succeeded in obtaining morphine in a pure state Pierre Joseph Pelletier isolated the alkaloid emetine, and in collaboration with François Magendie determined its physiological action.[2] The discovery was quickly followed by that of strychnine, quinine, and veratria, which alkaloids, with that of morphine, so absorbed the attention of the medical profession that emetine was neglected, and remained so until June, 1829, when Dr. James Lomax Bardsley, physician to the Manchester Infirmary, published his "Hospital Facts and Observations," and so drew the attention of his medical brethren to the value of emetine. He writes (p. 149): "In some instances of dysentery, chronic diarrhœa, and chronic pulmonary catarrh I have derived from emetine, in combination with a small proportion of opium, much benefit."

Lieutenant-Colonel Walsh's 20 cases[3] show that emetine cuts short the disease by its germicide action, as Surgeon Veddes has proven. The more recent articles on emetine go to demonstrate that in the alkaloid there is a trustworthy remedy for dysentery, based on scientific principles; and to Dr. J. L. Bardsley, of Manchester, we are indebted for its empirical use in dysentery.

I am, Sir, yours faithfully,

Oct. 26th, 1912. GEORGE FOY.

THE BELL-MAGENDIE QUESTION.

To the Editor of THE LANCET.

SIR,—Dr. Edridge-Green has called attention to an "Advertisement" printed in Vol. XII., 1823, of the Medico-Chirurgical Transactions to the effect that "It has been resolved by the President and Council that the Society *shall* publish half-yearly, namely on the 1st of July and the 1st of February, such Papers as shall have been ordered by the Council for Publication," and he infers from this and from

[1] Hare: Practical Therapeutics, 1912.
[2] Rec. Chi. et Phys. sur l'Ipecacuanha, 1817.
[3] Medical Annual, 1893, from Indian Medical Gazette, September, 1891.

the year marks of the plates in this volume, that this intention was actually fulfilled during the previous year 1822–3. I am afraid that I cannot admit this inference as valid. It seems to me more probable that the advertisement signifies previous irregularity of publication, and an intention to observe greater regularity in the future—an intention which, as shown by subsequent volumes, was not fulfilled. But as I expressly stated in THE LANCET of Sept. 28th, p. 901, the precise date of publication of Shaw's paper on Partial Paralysis can only be guessed at from collateral evidence, and considering its context as a whole its precise date of publication is of little or no consequence. Shaw's footnote to the first and second editions of his Manual of Anatomy (1821, p. 261; 1822, p. 320) show clearly enough what the experiments in question amounted to in his own estimation in February, 1822—i.e., before he had read Magendie's paper of August, 1822:—

> Some curious experiments have been made in Windmill-street on the comparative degree of sensibility of the two origins of these [cervical] nerves. In these experiments there was sufficient observed to induce us to believe, that there is much difference between the two sets of fibrils; but from the difficulty of making them, the facts are not yet so distinct, as to permit us to mention the results.

Dr. Edridge-Green does not make it at all clear what are the precise conclusions he draws from Shaw's paper of 1822 and from Bell's booklet of 1811. He apparently rests Bell's case chiefly, if not exclusively, upon the latter; but it seems to me that he is unconsciously shifting his ground when he says that on reading Bell's book (1811) it was evident to him that more should be claimed for Bell than had already been done—namely, that the law which is known as Müller's law of the specificity of the sense organs, was clearly stated first by Bell. Dr. Edridge-Green puts this as an *additional* claim, implying, yet not definitely stating, that he upholds the original claim put forward by Bell (and Shaw) in August, 1822, but he has offered no direct evidence in support of the original claim, and I am disposed to regard this additional claim as a red herring. I shall not follow this new trail. The original question was and is: "Did Bell or Magendie discover the motor and sensory functions of the anterior and posterior roots of the spinal nerves?" In substance Dr. Edridge-Green in his last communication propounds an alternative rather than an additional claim, and, like Professor Keith, he has implicitly dropped the original claim. Dr. Edridge-Green says I make much of his statement that perhaps the alterations to which I called attention in Bell's texts of 1821 and 1824 had been made by an assistant. Not at all. I make much of the alterations themselves, which I again recommend to the careful consideration of Dr. Edridge-Green, either in the original texts or in the quotations given at p. 904 of THE LANCET of Sept. 28th.—I am, Sir, yours faithfully,

A. D. WALLER.

Physiological Laboratory, University of London, South Kensington, Oct. 25th, 1912.

THE RELATIONS OF THE PRACTITIONER AND THE SPECIALIST IN X RAY WORK.

To the Editor of THE LANCET.

SIR,—Finding that there is a certain amount of uncertainty about the relations which should exist between the "roentgenologist" and the practitioner who sends the patient to him, and also that the medical man in attendance has some difficulty in explaining to the patient the position of the specialist or expert, I think it might be as well to reproduce the resolution which was passed at the Berlin Congress of the German Roentgen Society, April 14th, 1912, defining the status of the specialist in roentgenology:—

1. Roentgenology is a duly authorised medical specialty, just as are laryngology, ophthalmology, &c.
2. The roentgenologist is a medical specialist, and as such, in accordance with the usual medical custom, he is called in as a medical consultant by the patient or his physician, in order to make or confirm the diagnosis.
3. The roentgenologist makes use of Roentgen examinations in addition to the usual clinical examination. He alone decides what particular procedure shall be employed—radiography, radioscopy, orthodiagraphy, or teleoroentgenography.
4. All plates, diapositives, tracings, orthodiagrams, and teleoroentgenograms prepared for the diagnosis of the case are the property of the roentgenologist, just as histological preparations belong to the consulting pathologist. The roentgenologist will, however, as a matter of courtesy, be always ready, if requested, to place his plates and prints at the disposal of the consulting physician.
5. The supply of negatives or prints to sick clubs and insurance companies is a matter of special arrangement. Moreover, in urgent cases it is the usual custom of the roentgenologist to place the skiagram at the disposal of the surgeon.
6. The roentgenologist may at his discretion place a copy of the plate at the disposal of the patient, either gratuitously or on payment of a fee. This should, however, only be done in those cases where it will cause no harm or needless anxiety to the patient.

I may add that these resolutions were adopted by the American Electro-Therapeutical Association at the twenty-second annual meeting, September, 1912.

I am, Sir, yours faithfully,

F. HOWARD HUMPHRIS, M.D. Brux., F.R.C.P. Edin.

West Chapel-street, Mayfair, W., Oct. 27th, 1912.

THE SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE (LONDON, 1913).

To the Editor of THE LANCET.

SIR,—In consequence of one or two inquiries that I have received, will you kindly permit me to state that no photograph album of the Congress is either issued or contemplated by the authorities of the Congress?

I am, Sir, yours obediently,

W. P. HERRINGHAM,
Honorary General Secretary.

13, Hinde-street, London, W., Oct. 26th, 1912.

THE FLANNELETTE QUESTION.

To the Editor of THE LANCET.

SIR,—In the *Daily Express* of to-day's date, a full-page advertisement of "Non-Flam" appears, in which a quotation from evidence given by me before the departmental committee appointed to inquire into the law relating to coroners' inquests, &c., is given as follows. "Dr. Parry, of the Children's Hospital, Brighton, in giving evidence before the Home Office Committee, says: 'Practically every death or serious accident from burning is from a flannelette garment!'" This is placed close under the following words: "Non-Flam. The only safety flannelette fabric that is *really* safe!" I have two complaints to make against the Non-Flam firm. The first is that my name is used by them without my permission. Perhaps as it is a quotation from a public document I have not much right to object to this. My second complaint is more serious. All the evidence I gave before the committee was to show that it was impossible to substantiate the claims of Non-Flam as a fireproof material, and that after a few washings in the ordinary way the fabric burnt readily. (I burnt some specimens of washed Non-Flam before the members of the committee, and showed how easily it flamed.) It is under these circumstances that I desire to protest against the use of my name in support of a material which I am convinced does not possess the properties which its makers advertise.

I am, Sir, yours faithfully,

Hove, Oct. 28th, 1912. L. A. PARRY.

THE DEAN OF ST. PAUL'S AND CHRISTIAN SCIENCE.

To the Editor of THE LANCET.

SIR,—The brief report in your last issue of a sermon of mine at Brighton is not only misleading, but is, I am afraid, likely to prejudice the course of a perfectly impartial inquiry. It would have been better if I had not mentioned the committee at all, since its proceedings are private, though its existence is no secret. But since that degree of indiscretion has been committed by me, will you allow me to say that (1) "Christian Science" has not been touched by the committee, at any rate since I joined it; (2) I was only expressing my personal opinion when I said that "at present" I believed that "no organic disease can be touched by these methods," and that "churchmen and churchwomen ought to be very suspicious of the fashionable tendency to dabble in occult supernaturalism." I alluded to this tendency in the course of an exhortation, the gist of which was, "When you are ill, trust a good doctor and leave the issue calmly in God's hands." I am, Sir, yours faithfully,

Deanery, St. Paul's, E.C., Oct. 30th, 1912. W. R. INGE.

THE USE OF ERGOT IN CHOREA.

To the Editor of THE LANCET.

SIR,—May I crave the indulgence of your space to point out to Dr. Eustace Smith that I introduced the use of ergot in chorea in January, 1884? Dr. Eustace Smith, in the new "System of Treatment," edited by Dr. Arthur Latham and Mr. Crisp English, states that there is no drug which he knows of which is more useful in chorea than ergot. My original note was published in THE LANCET on Jan. 26th, 1884, and it was reproduced in Braithwaite's "Retrospect of Medicine" for the same year (Vol. LXXXIX.). The drug was somewhat extensively tried with success in America after the publication of my note. I think I can claim to have added this small quota to the relief of suffering humanity. I am, Sir, yours faithfully,

Oct. 28th, 1912. J. ROCHEID FORREST.

THE MEDICAL PROFESSION AND THE NATIONAL INSURANCE ACT.

To the Editor of THE LANCET.

SIR,—I desire to call attention to an aspect of Mr. Lloyd George's new proposals in regard to sanatorium benefit—an aspect which has so far received no attention.

In his speech before the Advisory Committee on Oct. 23rd he stated that he proposed to give the doctors a capitation fee of 6*d.* per annum for each insured person to cover the cost of treatment of tuberculosis, this capitation fee to be in lieu of the payments for attendance, fees for which have in many cases been already arranged. What will be the effect of this new proposal?

1. It will tend to put a stop to the zeal which was being aroused amongst doctors in regard to the detection and treatment of tuberculosis. Many doctors were beginning to study the use of tuberculin, and were devoting much more care to the detection of early cases of pulmonary tuberculosis. The county and city bacteriologists were having many more specimens of sputum sent to them for examination for tubercle. The reasons for this activity in regard to tuberculosis were twofold. Firstly, it appeared that we were at last to be given the opportunity of successfully treating cases of tuberculosis among the poor. Secondly, the fees promised for this treatment under sanatorium benefit were comparatively good. If these fees are to be done away with, and a capitation fee given in its place, all pecuniary incentive is not only withdrawn, but there is actually a strong inducement offered not even to detect the cases. For if a doctor notifies a case of pulmonary tuberculosis it is quite possible he may be required by the chief tuberculosis officer to give tuberculin treatment for it, and be thus committed to giving a form of treatment which involves much time, trouble, and care.

Mr. Lloyd George gave as one reason for his new proposal that it would prevent a doctor being exposed to the temptation of keeping a patient at home for domiciliary treatment then it might be better for the patient that he should be sent to a sanatorium. It might be a temptation, but, if necessary, the chief tuberculosis officer should be able to prevent this; and, moreover, under his new proposals Mr. Lloyd George's argument cuts the opposite way, for, with payment by capitation fees, it will clearly be a temptation to the practitioner to get every case sent to a sanatorium in order that he should be relieved of the trouble of treatment, and, in the case of tuberculin, of a form of treatment involving much time, trouble, and care. Thus the proposed capitation payments for sanatorium benefit will tend to nip in the bud much of the newly aroused attention on the part of doctors for tuberculosis. It is thus entirely opposed to the interests of the public, who would, under the original system, have unquestionably obtained far better service.

2. From the financial aspect the new proposals will be utterly to the detriment of the public purse. In a sanatorium each case will cost between 20*s.* and 30*s.* a week to treat, and in many cases the dependents will have to be supported while the bread-winner is away, whereas it is now the experience of an increasing number of doctors that many cases can be most successfully treated at home, and with the patient still at work. The cost of such treatment is only about 10*s.* a week, and thus on financial grounds is infinitely superior to treatment in a sanatorium. In addition, the new proposals will give an enormous impetus to the building of sanatoriums—i.e., the spending of money on bricks and mortar. But the new financial proposals are just as detrimental to the doctor as to the public.

I will endeavour to show how this is by using actual figures. Firstly, with regard to fees, many Insurance Committees have already agreed to pay a fee of 5*s.* for the first report on any case, and a fee of 2*s.* 6*d.* for each consultation and of 5*s.* for each consultation accompanied by an injection of tuberculin, the committees supplying the tuberculin free of cost. They are also agreeing to pay mileage when the patient is seen at his own home. Secondly, in any case of pulmonary tuberculosis treated with tuberculin it is usual to give about two injections a week—i.e., at intervals of three or four days. Thus each such case under domiciliary treatment would bring in about 10*s.* a week to the doctor treating it. Thirdly, such cases are generally under treatment for a period of at least six months, and may require to be kept under the treatment for as long as two years. I will take the shortest period—viz., six months. This is 26 weeks, which at 10*s.* a week gives £13 for six months' treatment of *one* case. Fourthly, let us suppose that under the Insurance Act a doctor had 500 insured persons on his list, for each of whom under the new proposals he would receive 6*d.* per head per annum. 500 sixpences amount to £12 10*s.* But of these 500 persons many will under the Act be unselected lives. One might, therefore, on a quite moderate basis estimate that 5 per cent. would be tuberculous and require treatment at one time or another. But as I wish to keep quite on the safe side, let us suppose that only 1 per cent. are thus affected. If these five have domiciliary treatment with tuberculin the doctor would receive in fees, *for six months' treatment only*, the sum of £65 (5 × £13 = £65.) But if Mr. Lloyd George's new proposals are accepted he will only receive £12 10*s.* for 12 months' treatment, no matter what the number of cases of tuberculosis he may have.

In short, if the new capitation fee of 6*d.* per head in lieu of fees for attendance is accepted the profession will make an extremely bad bargain. The sanatorium benefit was the one part of the National Health Insurance Act which appeared to be statesmanlike, and was, in consequence, the one part of the Act which the profession agreed to work; but the good inherent in this one part will be utterly destroyed by Mr. Lloyd George's latest proposal of "sixpence for tuberculosis." If the profession refuses to work the sanatorium benefit under the altered conditions Mr. Lloyd George will only have himself to thank.

I am, Sir, yours faithfully,

E. G. HAMILTON WILLIAMS.

Colwall, near Malvern, Oct. 27th, 1912.

To the Editor of THE LANCET.

SIR,—I think the profession, before declining the Chancellor's latest terms, should most carefully consider what these terms are, and also the alternative if these terms are rejected. Being myself a general practitioner in a large rural district I will consider the matter from the point of view of a country doctor. We are offered 9*s.* per head, inclusive, with a possible additional sum for additional drugs in the case of a bad epidemic. There is to be no mileage fee, and I fail to see that this should be insisted upon; in fact, I understand that the three Provisional Medical Committees for rural Norfolk have decided against this. There is to be no fee for fractures—but why should there be? A case of fracture is not more troublesome to treat than a case of acute pneumonia. The practitioners will be expected to keep simple records of their cases, but this will only mean a few extra words written at the side of the prescriptions, which surely most doctors already keep. Modern methods of diagnosis are to be used, but no one can think seriously that the Chancellor intends to include the Wassermann reaction, as has been suggested.

With regard to the income limit Mr. Lloyd George has something very significant to say. Each locality is to fix its own limit, and he adds that in some districts even £2 will be too high. He also adds that the degree of medical representation on the Insurance Committees ought to be discussed.

And now what is the alternative? I suppose 80 per cent. of the insured in rural Norfolk do not earn more than 20*s.*

per week. Our Public Medical Service scheme proposes to admit these for 8*s.* 8*d.* per annum, together with extras which we are not in the least likely to get. We have got to persuade the insured to come in, and we shall find a large number will not become subscribers at any rate until they are ill. We have also to collect the money ourselves, and the cost of this will be considerable. What I strongly urge the profession to do is to accept the terms offered, on condition that there is a larger medical representation on the Local Insurance Committees.

I am, Sir, yours faithfully,

G. S. KEELING, M.D. Cantab.

Attleborough, Norfolk, Oct. 27th, 1912.

To the Editor of THE LANCET.

SIR,—The latest offer of Mr. Lloyd George to the medical practitioners is a challenge. He certainly intends that doctors shall earn their 7*s.*, which is the "basis of the amount to be paid to the doctors." For this additional offer he demands that the doctors shall keep "simple records [bless his simplicity] of the patients whom they treat, the illnesses from which they suffer, and the attendances given," and goes on to say, "This is new in respect of the industrial practice of this country." There is no doubt about its newness, and Mr. Lloyd George admits he is asking for increased service. He also tells us: "It will be the duty of the Commissioners to see that a proper standard is reached and maintained in respect of number of visits paid or number of times a patient is seen at the doctor's surgery, amount of time and attention given, and where necessary resort must be made to modern means of exact diagnosis." Now all this means that if a medical practitioner is to carry out these terms he cannot attend to a sufficient number of patients to earn an income that would probably cover his rent. We can ill afford to neglect any opportunity of increasing our earnings, but the whole Act so bristles with objectionable and impossible requirements that it ought to be repugnant to every medical man who has the smallest respect for himself or his profession, and I hope the British Medical Association will voice these sentiments in no uncertain manner, and leave Mr. Lloyd George and his Act to the judgment of the working classes, who are supposed to benefit by "the refreshing fruit." He has torn the last shred of our independence to tatters if we consent to work this Act on his terms. It is impossible to suppose any medical man submitting to dictation from the Insurance Commissioners, or any other body of officials under the Act, as to the mode of making his diagnosis. A step further, and the treatment of cases will be tabulated, and the people made to swallow physic by Act of Parliament.

I am, Sir, yours faithfully,

Rodney-road, S.E., Oct. 26th, 1912. R. SAUNDERSON.

To the Editor of THE LANCET.

SIR,—At a meeting of the local medical profession convened by the Wandsworth Provisional Medical Committee I was instructed to forward to you for publication the following resolution, which was unanimously carried:—

Finding that the Provisional Medical Regulations under the Insurance Act contain no guarantee of a fund for the payment of the medical men attending insured persons, and that these Regulations ignore the other cardinal points originally formulated and repeatedly confirmed by the profession, this meeting of the medical practitioners of Balham, Battersea, Clapham, Putney, Streatham, Tooting, and Wandsworth declines to give them further consideration.

I am, Sir, yours faithfully,

J. KENNISH, Hon. Secretary.

Clapham Park-road, S.W., Oct. 28th, 1912.

To the Editor of THE LANCET.

SIR,—On Oct. 23rd I made a statement to the press that the pooled capitation fee of 8*s.* 6*d.* now offered by Mr. Lloyd George would be subject to large deductions before being available for medical remuneration. I estimated the deductions at 5*s.* 9*d.*, leaving a balance of 2*s.* 9*d.* for the general practitioner. The details of this statement have been widely criticised, and I should like to point out briefly how these deductions are substantiated by the Act and by the Regulations issued by the Commissioners.

The Regulations distinctly state that from the total available the committee shall make certain deductions. (These Regulations, it must be remembered, are law.) The first deduction is for the cost of medicines and appliances, not of drugs alone, as has been stated, but of appliances also. The German experience of 25 years' working of their Insurance Act shows that this item works out approximately at 3*s.* 6*d.* per head. Surely there is no reason why the cost under this head should be less here than in Germany, especially having regard to the fact that hospital staffs are stating that insured persons are no longer "necessitous," and this being so are not "fit objects of charity." Indeed, it would appear that 3*s.* 6*d.* is an under-estimate rather than otherwise, owing to the fact that the price of drugs is higher in this country than in Germany.

According to the Regulations the cost of drugs must be deducted from the money available. Mr. Lloyd George on Oct. 23rd said the same thing. His words were: "We propose ..... that we should find a fixed amount for doctoring and drugging, and that this should include ..... such 'extras' as come within medical benefit under the Act." Further, in speaking of the uncertainty of the doctor as to his pay, he mentions 7*s.* not as the *amount* the doctor will be assured, but as the *basis* of the amount, which may mean something very different. If Mr. Lloyd George really means that the doctor will get 7*s.*, then the Regulations will have to be altered, which can only be effected by Act of Parliament; but if the Regulations covering this point stand, then it is plain that the doctor is not assured of 7*s.*, or, indeed, of any sum.

It is noteworthy that Mr. Lloyd George expressly declined to apply the word "guarantee" to his "assurance." This problematical 7*s.* is to include "extras." Mr. Lloyd George says so. The Regulations schedule a list of "extras" to be deducted from the capitation grant. In short, there is no doubt whatever that the extras are a serious deduction from what remains of the 7*s.* What will they cost? Mileage certainly will be a very variable figure, a small proportion for a county borough and a large one for a sparsely populated and scattered area, but there is no provision for special fees under this head made by the Regulations other than out of the medical fund.

It has been stated that it is wrong to deduct estimates for operation, consultations, &c., in view of the fact that Mr. Lloyd George, in his speech on Oct. 23rd, stated that "the cost of extras apart from major operations and other special services, which of course are not included under the Act, must be provided from the fund which we set aside for medical attendance." I would point out that "medical attendance," as defined by the Act, and "treatment," as defined by the Regulations, undoubtedly mean all forms of treatment and attendance, including operations and consultations, and until these Regulations are superseded it is impossible to base arguments upon anything other than the Act and the Regulations.

It has also been stated that I am wrong in deducting an estimated sum of 3*d.* for administration. The Act, Section 15 (6) and Regulation 4 (2), however, state that the cost of this must be paid to the committees out of the money granted to the societies. This money, therefore, is a part of the fund available for medical benefit, and as the doctors only take the balance, it is clear that the administration charges make that balance less. When Mr. Lloyd George pictures the doctor saddled with an "unlimited liability in respect of drugs and administration," &c., he draws a correct picture as the Regulations define it.

Apart from drugs and administration, the total of my estimate of extras amounts to 2*s.* Mr. Lloyd George's estimate for the same items in his speech on Oct. 23rd is "2*s.* at the very least," and perhaps "much nearer 3*s.* or even 4*s.*" I therefore claim that the Regulations, in the light of Mr. Lloyd George's speech, substantiate the list of deductions from the medical capitation fee as follows:—

	s.	*d.*
Drugs and appliances, say	3	6
Mileage	1	0
Medical benefit of non-residents	0	3
Operations	0	6
Consultations	0	3
Administration	0	3
Total deductions	5	9

It must not be forgotten for one moment that, apart from

the money question, there are other very material points of difference between the Chancellor of the Exchequer and the medical profession. The demand by the doctors for an income limit of £2 a week for those entitled to medical benefit has not been granted, and it is evidently contemplated that the anomaly of doctors being obliged to treat, under the Act, rich men who happen to have been insured persons for five years (Act, Section 1 (3)) is to be allowed to remain where no income limit is fixed locally. If contract practice is to be carried into the sphere where incomes above £2 prevail, private practice will be undermined to a corresponding—indeed, to a disproportionate—degree.

The disciplinary clauses of the Regulations are particularly objectionable. A tribunal called the "Committee of Complaints," predominantly composed of laymen, is set up, and the findings of this Committee are dealt with by the Local Insurance Committee, composed of a still larger majority of laymen. It is to be hoped that every doctor will read and re-read the disciplinary Regulations (Nos. 48 to 51 inclusive), and ask himself whether he is prepared, for the sake of settling this dispute, for the sake of preventing the launching of a Public Medical Service, or for any reason at all or in any circumstances whatever, to submit himself to such a condition of medical service.

Further, the injustice and inexpediency of the prohibition of dispensing by doctors should sink into the mind of every member of the profession. Doctors will lose a right which they acquired with their diplomas. Their prescriptions will be in the hands of the public to be copied, compared, and recommended on all sides. What has cured the insured member of the family will no doubt be tried for the ailments of the dependents—the only "paying" patients who will be left in an industrial neighbourhood. Whilst one Regulation arbitrarily withdraws from the doctor the right to dispense, another Regulation proposes that the right shall be restored upon occasions of emergency. What doctor would keep a fresh, up-to-date, and complete supply of drugs which he was only allowed to use in case of emergency? In all circumstances doctors should *insist* upon retaining their statutory right to dispense for all their patients.

I am, Sir, yours faithfully,

5, John Dalton-street, Manchester, Oct. 29th, 1912. J. WEBSTER WATTS, Secretary, National Medical Union.

To the Editor of THE LANCET.

SIR,—I sincerely hope the profession will treat the Chancellor's new "terms" and "conditions" as they deserve. As he has not conceded even *one* of the six cardinal points which we have put forward as our minimum requirement for working the National Insurance Act, there is no necessity for discussing his recent pronouncement, whilst the innuendo conveyed by the "conditions" makes it derogatory to the profession to so much as consider them. I am, Sir, yours faithfully,

Oct. 28th, 1912. A F.R.C.S. ENG. IN GENERAL PRACTICE.

To the Editor of THE LANCET.

SIR,—Until the Chancellor of the Exchequer made his statement to the Advisory Committee last week there had been no official pronouncement as to the sum it was proposed to allocate for the payment of drugs and other medical and surgical appliances for persons insured under the National Insurance Act. It was a general belief, however, that the Government actuaries made their estimate on a basis of 1*s.* 6*d.* per head, and this appears to have been well founded. The proposal to increase the sum available for this purpose by a possible 6*d.* per head is therefore an improvement on the original plan; but since there are no means of knowing what the drug bill will be until the scheme has been in operation for at least a year, it is obvious that pharmacists are not in a position to say whether or not it will be sufficient. The matter, however, does not appear, from the pharmacists' point of view, to be of vast importance, for it is obvious that if the sum of 2*s.* is found to be insufficient the deficit will have to be made up by a special grant of some kind, since it is clear that no public authority could refuse to pay its just debts. The pharmacist will simply be paid for the work he does and the goods he supplies according to a scale of charges which will probably allow of an exceedingly small margin of profit, and it is inconceivable that the bills he will send into the local committee will not be met even if the sum allocated for the purpose is inadequate. The question whether it will be necessary for any or all of the committees to use part or all of the extra 6*d.* is, however, of considerable importance, but is one which at present cannot be answered, and under the circumstances it is impossible for medical practitioners to regard the £320,000 as part of their remuneration. Statistics relating to the cost of drugs, &c., under the German insurance scheme can be of little or no assistance as a guide in estimating the possible cost of the pharmaceutical service in this country. In the first place, the practice of pharmacy in Germany is in many respects totally different from the practice in Great Britain, and while in Germany the prices of medicines, even for ordinary customers, are fixed by a Government department the prices in this country are regulated by a competitive system. In Germany the scale of charges under the Insurance Act is based upon the statutory tariff and is not substantially lower than that tariff, but the prices which chemists are likely to obtain under the British insurance scheme may yield a very much smaller margin of profit than is the case in Germany. This difference alone would make the English drug bill much lower than the German. Another factor which must be taken into account in comparing the cost in the two countries is that in Germany the societies provide their members with costly goods and appliances which are not among the articles to be supplied under our own scheme. For instance, the expenditure on medical and surgical requirements incurred by some of the German societies includes spectacles, artificial teeth, artificial eyes, &c., and also includes payment for costly treatment at baths. The list of appliances which the British Insurance Committees are entitled to supply is a very meagre one, and it must also be remembered that many of the German societies provide medicines for the dependents of insured persons, so that it is quite impossible to compare the cost of the drug bills in the two countries; but it is obvious that under our own scheme the bill will be very much lower than in Germany, although it remains to be seen whether it will be below 2*s.* per head. I am, Sir, yours faithfully,

Oct. 28th, 1912. PHARMACIST.

LABORATORY WORK UNDER THE NATIONAL HEALTH INSURANCE AND THE PUBLIC HEALTH ACTS.

To the Editor of THE LANCET.

SIR,—In discussions relating to the administration of the National Health Insurance Act the question of laboratory facilities has not appeared to receive much notice or consideration.

It may be assumed that the Act in its working will call for the full use of those methods which facilitate precision and acceleration in diagnosis, prognosis, prevention and treatment, and that laboratory assistance for those who agree to act on panels will accordingly take rank as an essential factor in the administration of medical benefit. At the same time it has to be recognised that the prospective laboratory requirements of the National Health Insurance Service will be coincident or identical in many respects with the present requirements of the Public Health Service, and that it will become mutually incumbent upon both services in due proportion to provide the necessary facilities.

The provision of efficient laboratory facilities for the two services is therefore a matter for urgent and careful consideration. Methods of laboratory technique and research have become so much elaborated and even specialised, that they can only be carried on to the fullest advantage where equipment is most complete and where there is a sufficient staff having the requisite time and experience not only for routine work but for research. The experience of the past, both in our own and in other countries, clearly indicates that these conditions would be most effectively met by laboratories occupying a central position in relation to population and facilities of transit, rather than by innumerable local laboratories in which a limited scale of equipment and staffing would render only a limited service.

A number of central laboratories already exist dealing mainly with the work of preventive medicine, and it seems a matter for mutual arrangement between local authorities and Insurance Committees to provide the requisite supply for the needs of both services in central positions throughout the country. I am, Sir, yours faithfully,

Glasgow, Oct. 29th, 1912. R. M. BUCHANAN.

THE FIFTEENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY AT WASHINGTON.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

(*Continued from p. 1182.*)

Washington, Oct. 5th.

The Work of the Sections: Hygiene and Party Politics.

Section VI., State and Municipal Hygiene, and Section VII., Hygiene of Traffic and Transportation, held a joint sitting on Tuesday morning, Oct. 1st, when many energetic protests were made by different speakers against the interference with public health administration that arose in the United States from the American system of party politics. Competent officers were constantly replaced, it was alleged, so as to make room for the friends of the party in office. A speaker from Cleveland indignantly exclaimed that the Public Health Department was the most important and the most neglected of all the public services in the country. The people themselves and their representatives were most to blame, and neither one nor the other showed any disposition to spend money on measures for the prevention of disease. For a more or less problematical external foe money was readily spent, and there was no stint in the provision of armaments. But against the foe of whose presence in their midst there could be no doubt, precautions were not taken, and there were no means of getting sufficient money for the purpose. A representative from Alabama gave a better account of his State. No medical officers, he said, were removed when the party in office was changed.

Centralisation and Sanitation.

Dr. THEODORE THOMSON, representing the British Local Government Board, the Board whose medical department in some ways discharges the functions of a Minister of Public Health, read a paper describing the central sanitary administration in the United Kingdom. He first explained that various ministries supervised different branches of government work, and that under more than one of them questions of public health or sanitation might arise. He described the work of the local administrative and sanitary bodies, and explained the principal Acts governing public hygiene, such as the Housing Acts, the Factory Acts, the School Inspection Act, the Prevention of Adulteration Act, &c., thus showing the many-sided relations that existed between the central government and the local authorities. He here alluded to the serious difficulty caused in international relations through the absence of central authority in the United States of America. Representatives came to international conferences, and when a common agreement had been attained to the Americans were placed in difficulty about signing, because they could not say whether what had been accepted would be carried out by all or by only a few of the independent State Governments.

The Purification of Water Supplies.

In the afternoon the same sections heard many papers on the water-supply question. Mr. GEORGE W. FULLER, civil engineer of New York, read an important paper. In America generally, he said, river water was a muddy water. Forty-five years ago sand filtration was unknown. The process in America dates from 1867, when a commission appointed at St. Louis to look into the question went over to Europe to collect information. The report then drawn up by James P. Kirkwood became a classic; it was even translated back into German. Thirty years ago engineers were led to believe that sand filtration was not a practical measure in the light of bacteriological developments, though such filters were installed in connexion with the Hudson River. In 1892 new filter plants were introduced on a large scale by various American towns with varying results. In 1898, at Cincinnati, they tried sedimentation and coagulation. Sand removed 25 per cent. of vegetable colouring. Purified water sometimes attacked the service pipes. This was probably caused by the carbonic acid released from the applied coagulants, such as sulphate of alumina, and might be controlled by employing some soda of lime.

Mr. S. RIDEAL, D.Sc. (London), read an important paper. No pure water, he urged, existed in nature, and all supplies were liable to pollution and to interruption. The longer the conduit the greater the danger. Many accidents might occur, as well as drought in the uplands, which produced the condition of war as when an enemy would cut the aqueduct to a city. Here the question of afforestation was to be considered. Again, how were the gathering-grounds to be protected? how were tramps to be kept away from them? In the Straits Settlement one town had an admirably protected water gathering-ground where rubber-trees had been planted. But now the trees had grown and there was rubber to be gathered. Of course, the sanitary authorities objected, and now the entire district was divided into two great political parties; there were the Tappers and the non-Tappers. Moreover, a naturally pure water did not arrest the spread of pollution when pollution occurred. It was now beginning to be urged that water should be stored for two months. This was done with the Thames water, and after such storage the water was rendered fit for filtering. Something more was wanted, however, in the speaker's opinion, that even a pure gathering ground and a long storage cannot supply, and he described at length experiences with a chlorine process.

Ozone and the Ultra-violet Rays.

A paper by M. DIENERT, chief of the Surveillance Service of the Paris water-supply, was presented and discussed by M. E. IMBEAUX, of the *Ponts et Chaussées*. Both these eminent authorities on hydraulic engineering agreed with what had just been said. Nobody denied the efficacy of the sterilisation, and at St. Maur they treated 90,000 cubic metres of water per day with ozone. But will the apparatus keep in order? Will the supervision be easy? If the water contains much organic matter, then more ozone will be needed, and therefore constant vigilance is necessary. This is even more needed where the ultra-violet rays are employed and sealed automatic registering instruments must be applied. Further, the water has to be analysed before the process so as to know what is needed, and after to verify if the operation has been successful. For the ultra-violet rays the water must be very clear, so that they may penetrate; but it is injurious to the eyes and the skin, therefore the apparatus must be covered over. Then there are the vapours of mercury to produce the rays. If there is iron in the water it will oxidise even at a depth of 30 centimetres under the action of the rays, and therefore it must be extracted first of all. The water remains five seconds in the box where the rays are generated, and passes through that light four or five times. If the lamp goes out the system stops automatically, but enough experience had not yet been acquired to say whether the ultra-violet rays would prove practical when applied to the purification of the water-supply of a large town. Now we were less anxious; for, if the water-supply seemed to be of a questionable quality, we simply used a little chlorine. This was done last year in Paris, when during the exceptionally dry weather the Marne river water had to be used instead of the spring water generally supplied.

A Natural Water-supply.

Mr. RUDOLPH HERING, D.Sc., New York City, described the gathering grounds that yielded 40,000,000 gallons of water daily to San Francisco City. It was a large territory owned by a private company and it was not inhabited. The water was not filtered, the only security was the careful fencing round of the grounds, and no cattle or human beings were allowed to go there. The results were very good and there were very few cases of typhoid fever. This was natural water and undoubtedly the best of water if it can only be obtained from a clean ground. After hearing these and other papers the audience left without expressing any opinion whatsoever on the important issues raised.

Oct. 6th.

Hygienic Propaganda.

Dr. LIVINGSTONE FARRAND, the able and active executive secretary of the American Association for the Prevention of Tuberculosis, had much sound advice to give to Sections VI. and VII. in regard to propaganda work. He commenced by stating that public health was a purchasable article, and, within limits, becomes a matter of money plus law. But we could not get either law or money without the stimulus of public opinion. Therefore we were forced back to education, which was the foundation of all things. On these lines a great work of propaganda had been organised.

throughout the States. In their efforts they had been greatly aided by the press. But the most useful ally was the moving picture, for they had to reach people who would neither read nor listen. Dr. Farrand concluded his address by protesting against exaggeration. The facts were big enough.

Sanitary Engineering.

Continuing the discussion on the best means of teaching and on what should be taught in regard to the laws of hygiene, Professor GEORGE C. WHIPPLE, of Harvard University, insisted on the importance of sanitary engineering. From simple plumbing and the potter's work to the most scientific civil engineering one and all sought to adapt the forces of nature to the preservation of public health. But engineers must be broad-minded, for they had to assimilate many other sciences than their own. They, of course, had to be good mathematicians, but they must also have knowledge of practical mechanics. Geology, zoology, bacteriology, chemistry, vital statistics, had all to be studied, understood, and applied. But the sanitary engineer must primarily be trained in engineering—the other sciences only taught what should be done and not how it should be done. In some cases a good deal of laboratory work was needed, and, of course, there must be a thorough knowledge of hydraulics. Then when the model sanitary engineer had been brought into existence, a model sanitary executive was necessary to sanction the work the engineer would wish to undertake.

What Health Officers should Know.

Dr. FRANK F. WESBROOK, professor of pathology and bacteriology at the Minnesota University, and President of Section VI., pointed out that training in hygiene needed at least one year and more, probably three years, of special study after qualification. Dr. Wesbrook showed the practical impossibility of any one man really knowing all a health officer should know. Nor was there in existence any one hygienist capable of teaching all these different branches of sanitary science. Then much of this could not be taught in books and school. It needed practical experience, object-lessons, not theories, and, above all, a great knowledge of mankind. The public health officer had to deal with men and women. He had to inspire them with respect for himself and belief in the usefulness of his functions. If the public did not second his efforts his mission was a failure.

Dr. WILLIAM F. SNOW, State Board of Health, California, insisted on the presentation of documentary evidence in support of points raised or taught. Then in each centre there should be at least the nucleus of a museum. The health bulletins issued to the public should be drawn up by capable writers, who knew how to present facts in a readable manner, and distributed in sufficiently large numbers. They had better abandon popular doggerels on killing flies in order to print matter likely to be useful to teachers. But, after all, what were they going to teach? In one locality it was believed that with a wholesale slaughter of cows bovine tuberculosis could be stamped out. Elsewhere they were told the cows might be left alone if the patients were at once snatched away from their homes and isolated. Others were content with more frequent and rigorous disinfection, and yet a fourth party maintained that the housing problem was at the root of all the evil.

When these points were brought forward the section was crowded: men of all nationalities were present. How useful, how interesting it would have been to obtain an expression of opinion! By a vote, Section VI., after hearing these arguments and papers, might have given some guidance by indicating which of all these measures it thought was the most urgent. But absolutely nothing was done. Able papers were read, but no one has the slightest idea of what effect they produced.

Physical Training.

Professor DUDLEY A. SARGENT, of Harvard University, spoke on applied physiology, describing the great improvement in health and physique which had followed systematic training. Of 136 colleges and universities 94 per cent. had regular instruction in gymnastics. What athletic training had accomplished in America was not realised abroad.

Popularising Hygiene.

Miss ROSALIE SLAUGHTER MORTON, honorary chairman of the American Medical Association Committee on Public Health Education, New York, described the propaganda work done among the people. Their lectures were very successful. Each member of the audience was made to feel he was part of a great movement. All classes of the community attended, and there were overflow meetings. Forty-two subjects covered the whole field of preventive medicine. They first of all properly ventilated the hall. Then they frequently changed the speakers, since people soon tired of hearing the same voice. Also they avoided fatiguing the eye by a prolonged lantern show. They strove to encourage the audience to ask questions and state what subjects they would like to hear explained at the next lecture.

The Independence of Medical Officers.

The section now reverted again to the question of the education of sanitary officers and their position. Sir GEORGE MCCRAE, Vice-President of the Local Government Board of Scotland, insisted that even the sanitary inspector as well as the medical officer of health should not be subject to dismissal at the hands of the local authority. The difficulty was in rural districts where there was not enough money to pay such functionaries adequate salaries. In some cases they had to drive as far as 40 miles; but as the work they did was of use to the entire nation as well as to their immediate locality the State should help financially exceptionally poor districts.

Dr. SANDWITH, of Alabama, insisted that health boards must consist of qualified practitioners only, must be divorced from party politics, and freed from the domination of commercial men. At present, in American experience, if a board of health proposed some reform it was treated as a party measure and opposed as such. The education authority should be absolutely uninterested in party politics, so that sanitary measures might be brought forward and discussed solely on their technical merits.

(*To be continued.*)

BRISTOL AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Administration of Sanatorium Benefit in Bristol.

THE scheme drawn up by the Provisional Medical Committee of the Bristol area, the Insurance Committee, and the Municipal Health Committee for the temporary administration of sanatorium benefit under the Insurance Act has now received the approval of the Commissioners and will forthwith be put into effect. The mechanism is briefly as follows. The patient entering upon the receipt of benefit has the form known as "Med. 2," provided by the Local Government Board, filled up by his own medical man, who states his opinion as to the kind of treatment required, whether domiciliary or institutional. This form is taken to the medical officer of health, who is acting as chief tuberculosis officer for the time being. He may accept the diagnosis and recommendations set forth therein, or he may consider a second opinion necessary. If he takes the latter view, or if the patient himself gives reasons for particularly desiring a consultation, the medical officer of health will refer the case to one of the local consultants, whose names will presumably appear on a list from which the patient may choose. For such consultations a fee of 1 guinea will be paid. If the patient's medical man recommends him for special dispensary treatment, he may be referred to the Redcliff Tuberculosis Dispensary, which is under the control of a whole-time officer. Otherwise the patient may be recommended for sanatorium treatment or for domiciliary treatment by his own medical man. If the latter course is adopted, periodical reports to the medical officer of health will be furnished by the medical attendant of the patient. Payment to medical men undertaking domiciliary visit will be made on a basis of 2*s.* 6*d.* per visit, with certain extras. This scheme is only temporary, but no doubt it will be placed on a permanent footing if it works satisfactorily. The medical men of the district are urged, in a letter from the secretaries of the Provisional Medical Committee published in the local press, to work the plan as economically as is consistent with efficiency. Much praise is due to the Insurance and Health Committees for the reasonable and courteous spirit in which they have conducted the necessary negotiations.

University of Bristol: Installation of Lord Haldane as Chancellor.

The formal installation of Lord Haldane as Chancellor of the University of Bristol, in succession to the late Mr. Henry Overton Wills, took place in the Colston Hall on Oct. 17th. On entering the hall Lord Haldane was preceded by a procession consisting of students, graduates, teaching staff, the Vice-Chancellor, the honorary graduands, and the Pro-Chancellors. The registrar having read the deed of appointment, it was presented to the Chancellor by the chairman of council, Mr. Lewis Fry, who said: "Lord Haldane, the unanimous voice of the University has invited you to become its Chancellor and head. On the part of all its authorities and bodies, I have the honour to express the profound satisfaction of the University that you have seen your way to accept its invitation. It now remains for me to place in your hands the insignia of the chancellorship—namely, this key of the University seal and this copy of its charter, the protection of which we confidently commit to your care." Lord Haldane expressed his deep sense of the honour conferred upon him in choosing him as Chancellor in succession to one who did a noble work in helping to bring the University into life. The University was now a living organism, the creation of the citizens of a great city, and was already influencing and moulding the opinion of Bristol in matters of learning. He had spent a considerable part of his life and energy in endeavouring to forward the cause of the new civic university. He hoped that there might be left to him enough of life and energy to help them along a stage still further in moulding and fashioning the operations of this new and great conception. Lord Haldane was then admitted to the degree of Doctor of Laws, and the other recipients of honorary degrees were admitted by him. There was a very long list—much too long in the opinion of many—which included the Prime Minister and Mr. A. J. Balfour, Lord Roberts and Mr. Augustine Birrell. Honorary degrees were also conferred on local medical men as follows: M.D.S., on Mr. W. R. Ackland; M.Ch., on Mr. Nelson C. Dobson, F.R.C.S., and Mr. J. Paul Bush, C.M.G.; M.D., on Mr. R. Shingleton Smith, M.D., F.R.C.P., and Mr. George Munro Smith; and LL.D., on Professor J. Michell Clarke, M.D., F.R.C.P. (pro-Vice-Chancellor of the University), Mr. F. Richardson Cross, F.R.C.S., and Mr. D. S. Davies, M.D., medical officer of health of Bristol. The students behaved throughout with great decorum. In the evening Lord Haldane delivered a most interesting address to a large audience in the Colston Hall, reviewing the history of the new university movement in Britain and outlining the part which the civic universities are destined to play in the national life. On the following morning he spoke to the students, his principal topic being the Officers Training Corps of the Territorial Force. He was seen off at the station by the students, who carried him from his car to the train amidst scenes of great enthusiasm.

The Sanitary Condition of Port Isaac, Cornwall.

At a recent meeting of the Cornwall Sanitary Committee, Dr. R. Burnet, the county medical officer of health, drew attention to the sanitary condition of Port Isaac, which he described as "barbarous" and lacking an efficient water-supply. As regards the disposal of sewage it was one of the worst places he had ever seen, and improvement was urgently necessary. It is to be hoped that now existing conditions will be remedied forthwith.

The Midwives Act in Cornwall.

The medical officer of health of Cornwall, Dr. R. Burnet, in his report to the midwives committee states that whereas six months ago there were 126 midwives on the roll, now the number had risen to 167. Dr. Burnet adds that the Act was working very satisfactorily.

Exeter Children's Home.

The Exeter board of guardians has decided to erect a children's home, to be built near the workhouse, at an estimated cost of about £7000.

The Winsley Sanatorium.

At the last meeting of the committee of the Winsley Sanatorium, owing to the resignation of the medical superintendent, it was decided to advertise the vacancy at a salary of £300 per annum, with board and lodgings. After considerable discussion it was decided by 7 votes to 5 that the appointment should be that of medical superintendent rather than "resident medical officer," and a resolution to that effect will be brought before the board of management of the institution.

Death of Mr. Albert William Coppinger, L.R.C.P., L.R.C.S., L.M. Edin.

Mr. A. W. Coppinger died recently at his residence, 33, Marlborough Buildings, Bath. The deceased, who received his medical education at Dublin and Edinburgh, also studied at Paris, and took the L.R.C.P., L.R.C.S., L.M., qualification at Edinburgh in 1865. He shortly afterwards went to Bath, where he was for 11 years resident physician at the Royal Mineral Water Hospital. Mr. Coppinger was in practice in Gay-street, Bath, for about 30 years, where he was held in high esteem. He retired from active work a few years ago.

Death of Mr. Edward James Leverton-Spry, M.R.C.S., L.M., L.S.A.

Mr. E. J. Leverton-Spry died at his residence, St. Keverne, Cornwall, on Oct. 15th, in his sixty-ninth year. He received his medical education at St. Bartholomew's Hospital, London, and qualified M.R.C.S., L.M., and L.S.A. in 1867. Mr. Leverton-Spry had practised for many years in St. Keverne, where he was highly esteemed. He was formerly honorary surgeon to the Royal Cornwall Infirmary, and was Admiralty surgeon and agent. He took a great interest in agricultural matters, being closely identified with the North Meneage Horticultural Society, the St. Keverne Agricultural Association, and the Spring Flower Society. He was a churchwarden of the parish church for many years. His son, Mr. E. Leverton-Spry, had for some time been associated with him in his practice.

Oct. 29th.

WALES.

(FROM OUR OWN CORRESPONDENT.)

Sanatorium Benefit in Cardiff.

THE Cardiff District Sanatorium Committee of the Welsh National Memorial has taken definite steps with regard to providing sanatorium benefit. At a recent meeting of the committee it was decided that immediate provision should be made for the city of Cardiff of a sanatorium with accommodation for 60 patients and that ultimately this should be increased to 100, which would be at the rate of one bed for every 2500 of the population. It is anticipated that an existing building will be found available and that there will be accommodation in it for a dispensary. At Barry there has been granted free of charge by the urban district council the use of a room at the Municipal General Hospital, and rooms have been taken at Penarth for a dispensary.

Medical Benefit in Colliery Districts.

It has been realised from the outset that whatever arrangements were finally made elsewhere for the administration of medical benefit under the National Insurance Act some special scheme would have to be devised for the colliery districts of South Wales and Monmouthshire. It is there the custom, whether the colliery surgeon is paid by a poundage on the workmen's wages or in some other manner, for the payment to be made in respect of medical attendance, not only on the workman himself, but also upon his wife and those children who are below a prescribed age limit. As these are not entitled to medical benefit under the Act it becomes necessary to readjust existing conditions. The whole question was considered at a recent meeting of the South Wales Miners' Federation, when important conclusions were arrived at. The federation decided to ask for the approval by the Insurance Commissioners of those systems of institutions providing medical treatment now existing, or which may be brought about under the provisions of the Act. It was further decided that where such institutions or systems do not exist deductions by poundage or otherwise should

still be made for payment to the colliery surgeon for the medical attendance on the wives and children, the payment being made as now through the colliery medical committees. The suggestion is made that the Local Insurance Committees should pay to the medical committees for transmission to the doctors the amount payable by the Insurance Committees in respect of the medical attendance on the workmen. It is proposed that although each district of the federation should make its own arrangements there should be conferences between the districts in order that there may be some uniformity of policy.

Merthyr Open-air School.

An interesting and convincing report has been made to the Merthyr local education authority by Dr. S. B. Walsh, medical inspector of schools, on the advisability of establishing an open-air school in the borough. He estimates that there are about 600 school children with suspected or actual tuberculous disease. Many of these are in the incipient easily cured stage of the disease, and if given a few months' open-air life might readily be set on the road to recovery. Most of them attend school, but at an obvious physical disadvantage, while there are a few "open" cases which have to be excluded from school attendance indefinitely, not that their home surroundings are considered to be better than those of the schools, but in the interest of the other school children. Dr. Walsh suggests that a portion of the Treasury grant for medical treatment of school children might be available towards the cost of an open-air school, and that a further contribution might be forthcoming from the funds of the Welsh National Memorial. In any case, he does not advise that elaborate buildings should be provided. Compared to that of an ordinary school, the cost, he considers, is trivial, and seeing that so much is being done for normal children in providing for them the most up-to-date schools, it seems harsh that something should not be done also for their unfortunate brothers and sisters who are ailing and defective.

Poor-law Administration.

In the annual report for 1911 of Mr. Hugh R. Williams, Poor-law inspector of the Local Government Board for Wales and Monmouthshire, reference is made to the institutional accommodation in the Principality, which is stated to be for the most part adequate. The greatest pressure has been in the infirmaries, sick wards, and sanatoriums for consumptives belonging to the larger Poor-law unions, such as those of Cardiff, Swansea, Merthyr, Pontypridd, and Bedwellty. This pressure is said to be due to the much greater readiness on the part of the destitute sick to avail themselves of the improved medical and nursing treatment provided for them. Operating rooms have been erected in most of the larger Poor-law infirmaries, and the buildings generally have been improved and are better equipped for dealing with all kinds of medical and surgical cases. The large workhouses are now becoming to a great extent infirmaries for the acute and chronic sick instead as formerly homes for the able-bodied. In this connexion it is of interest to refer to what has happened at the Bedwellty workhouse. A new master having been appointed he soon found that a large number of the male inmates were doing no work. He promptly organised suitable occupation for them and ordered them to perform the work allotted in accordance with the regulation that every man should be employed according to his capacity and ability. The men considered this was contrary to the custom of that workhouse and in the course of a few weeks over 100 took their discharge saying: "If we have to work we may as well get paid for it." As Mr. Williams states, this shows what can be done in clearing a workhouse of the "work-shy" and is a salutary lesson which it is necessary to administer to such malingerers both for their own benefit and the public welfare. Several boards of guardians in Mr. Williams's district have provided sanatoriums, open-air shelters, chalets, and separate wards in infirmaries and hospitals for consumptives, and there is scarcely a workhouse in which it is not possible to isolate cases of consumption requiring isolation. Indeed, in the period to which the report refers the boards of guardians, according to Mr. Williams, were the only bodies dealing in a practical and successful manner with tuberculosis in Wales and Monmouthshire.

Oct. 29th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh University: the Proposed Chair in Bacteriology.

IN the minutes to be submitted to the next meeting of the general council of the University it is stated that by the trust disposition and settlement of the late Mr. Robert Irvine, of Royston, Granton, power was given to his trustees to constitute the residue of his estate as a separate trust, to accumulate the funds of this trust until they amounted to the sum of £25,000 (or at the discretion of the trustees £30,000), and thereafter to devote this sum to the founding of a chair of Bacteriology in the University of Edinburgh and to the equipment of a class-room and laboratory connected with the chair. This endowment fund now having reached the sum of £30,000, the time has come for the establishment of the chair, and the University Court has promulgated a draft ordinance providing for the new professorship.

Inclusive Fees.

A conference has been held at Perth to consider the question of an inclusive fee in applied science and in medicine, at which representatives of the business committee of the general council of Edinburgh University attended. The committee has considered the minutes of the conference, and at the next meeting of the general council the following resolution is to be submitted:—

That the general council of the University of Edinburgh is of opinion that in seeking to impose the institution of an inclusive fee as a condition of the payment of Parliamentary grants, the Treasury is interfering unwarrantably with the freedom of the Scottish Universities, and that the business committee be authorised to take such steps as they may deem advisable in respect of this matter.

The late Dr. Sophia Jex-Blake.

Dr. Agnes McLaren has publicly called attention to the movement for commemorating the career of the late Dr. Sophia Jex-Blake by a tablet to be placed on the wall of the Edinburgh Hospital for Women and Children. The tablet is of dull copper mounted on marble and will bear the following inscription:—

In affectionate remembrance of Dr. Sophia Jex-Blake, M.D., Founder of this Hospital, to whose large courage, insight, and constancy the admission of women to the profession of medicine in this country is mainly due. Born January 21st, 1840. Died January 7th, 1912.

Although subscriptions are not solicited, anyone desirous of being associated with the memorial is invited to send a small contribution to Mrs. Mears, L.R.C.P.I., Woodburn, Morningside, Edinburgh.

Alford Hospital Affairs.

At a recent meeting of the Alford district committee a letter was read from Dr. Watt and Dr. J. Nicol, the two local practitioners, resigning their appointment as medical officers to the district hospital on the ground that they considered the present terms of appointment as medical attendants at the hospital unsatisfactory. It was mentioned that the letter of resignation was received following the decision of the committee not to increase the salaries of the two practitioners. It was ultimately decided to increase the joint salary by £5, and it was also agreed that a record be kept of the number of visits to the hospital. A letter was read from the clerk of the County Insurance Committee asking the committee to authorise its medical officer to supply details of all cases of pulmonary tuberculosis within the area of the committee.

Excessive Fatality of Non-Notifiable Epidemic Diseases.

Dr. A. K. Chalmers, medical officer of health of the city of Glasgow, has recently drawn attention to the excessive death-rate of non-notifiable epidemic diseases. In Glasgow the non-notifiable diseases—measles, whooping-cough, and diarrhœa—account for four-fifths of the death-rate from all zymotic diseases. The rate for measles alone during the past year is 375 per 1,000,000 persons living, as compared with 475 per 1,000,000 caused by all the infectious diseases which are notifiable. The rates for whooping-cough and diarrhœal diseases are each about twice the rate for the notifiable diseases. Among the notifiable diseases in Glasgow during last year diphtheria has been the most fatal, the death-rate therefrom being 221 per 1,000,000, while the rates from scarlet fever, enteric fever, and cerebro-spinal fever are 116, 75, and 59 per 1,000,000 respectively.

University of Aberdeen: Chair of Midwifery.

Professor R. G. McKerron, who has been appointed to the chair of Midwifery in the University of Aberdeen in succession to Professor W. Stephenson, retired, has given his first lecture. There was a large attendance of students, also of professors and medical men. Principal George Adam Smith formally introduced the new professor to his class. He said that he wished to say how glad they were to see Professor Stephenson among them that day. For 37 years Professor Stephenson had filled the chair, and he went into his well-earned retirement with the affection and goodwill of all who knew him. He did not think anyone could estimate what Professor Stephenson's services had been to the University who had not heard the testimony of his students after a few years in practice. It had been his (the Principal's) privilege in medical gatherings in England to hear one man after another tell of what inestimable value Professor Stephenson's instruction had been in the practical work of their profession. In introducing Professor McKerron, the Principal said that the new professor came among them as a friend, first of all, of the students themselves. He had shown a deep interest in everything that interested the students, and they would receive him now to the full charge of the chair, as a most competent, able, and experienced teacher. Professor McKerron returned thanks and proceeded with his lecture.

Aberdeen Town Council and Medical Fees under the Insurance Act.

At a meeting of the public health committee of Aberdeen town council held on Oct. 18th reports of the recent conferences were submitted from the county councils of Aberdeen, Banff, and Kincardine, recommending that the three medical officers should report on the joint scheme in connexion with the sanatoria clauses of the National Insurance Act. The second report dealt with the reception of the deputation from the sanatorium committee of the Local Insurance Committee, which urged upon the public health committee the need of establishing, at an early date, a tuberculosis dispensary and the appointment of a tuberculosis officer, and generally tackling the disease of tuberculosis. The third report related to the conference with the provisional local medical committee, and dealt with the question of paying the medical men in the city a fee of 5*s.* for notification of tuberculosis plus a report, instead of the present fee of 2*s.* 6*d.* for a notification alone. The committee reported that the medical men had expressed themselves willing to accept a 5*s.* fee and also to supply the required information, and to leave the public health committee quite free to sell, if they feel disposed, the information thus acquired to the Local Insurance Committee. The public health committee agreed to recommend to the town council that the fee of 5*s.* should be paid to the local medical men for notification and report.

Elgin and Nairn Insurance Committee.

A meeting of the Provisional Insurance Committee of Elgin and Nairn was held on Oct. 22nd at Elgin, Dr. G. M. Cullen, Edinburgh, being present. At the last meeting it had been agreed to recommend that the two counties should be divided into four districts—namely, Elgin, Nairn, Grantown, and Forres. The chairman and clerk had a subsequent meeting with the Commissioners and the Commissioners did not think there was much necessity for district committees. In view, therefore, of the railway fares of members at a distance being paid, it was moved and carried that there be only one district for the county. It was afterwards agreed to support the resolution of the Norfolk National Health Insurance Committee to the effect that travelling expenses, &c., ought to come out of imperial funds, as it otherwise would reduce benefits in a representation to the Chancellor of the Exchequer. Letters were submitted to the effect that Elgin fever hospital was not available for patients suffering from tuberculous complaints; neither was Leanchoil Hospital, Forres. Gray's Hospital, Elgin, could only admit surgical cases; but the small-pox hospital at Elgin, which had been erected several years ago and never used, might be available. One shelter had been obtained, and another three had been authorised by the Commissioners. Provisional regulations and model rules for administration and benefit were submitted and explained by Dr. Cullen.

Medical Attendance and the Insurance Act in Dundee.

The Medical Benefit Committee under the Insurance Act for Dundee has decided not to fix any income limit. Regarding remuneration of doctors the Medical Committee concluded that the capitation system should be adopted for insured persons who are members of Approved Societies in Dundee and who require medical benefit while resident there, and that the method of payment by attendance should apply to insured persons temporarily resident in Dundee, who belong to Approved Societies elsewhere. During the month 28 applications were made in Dundee for sanatorium benefit, the total number on the register now being 30, of whom 7 are at Sidlaw Sanatorium, 17 receiving home treatment, 4 dispensary treatment, and 2 are at King's Cross Hospital.

Medical Service in the Highlands and Islands.

The Highlands and Islands Medical Committee heard witnesses recently at Dunvegan from the parish of Duirinish, and subsequently at Portree it examined witnesses from the parishes of Portree, Snizort, and Kilmuir. It discussed the club system of payment for medical attendance in use in certain parishes, the majority being of opinion that though in some districts the collection of the subscription was unsatisfactory, on the whole the system was the most feasible one for providing a satisfactory income for the medical practitioner. By fees obtainable from patients the medical man could not make an adequate income; the parish councils have therefore to pay a somewhat high salary, which provides not only for attendance on paupers, what it is ostensibly paid for, but also provides medical attendance for poor non-pauper patients. The committee met in Perth on Oct. 23rd and there heard further evidence as to nursing and hospital provision.

Oct. 29th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Irish Universities and the Home Rule Bill.

IN the House of Commons on Oct. 21st the Government agreed to accept in substance an amendment, moved by the Right Hon. J. H. Campbell, to deprive the Irish Parliament of power of dealing with Trinity College (the University of Dublin) or the Queen's University of Belfast.

The National Insurance Act and Irish Feeling.

At the present time—both in medical and lay circles—people are waiting to see if the Chancellor of the Exchequer will be able to satisfy the medical profession. Little progress is being made in Ireland in providing sanatorium benefit. At a meeting of the conjoint committee of the Irish and British Medical Associations, held in Dublin on Oct. 16th, it was decided to appoint a special subcommittee to consider the question of the admission of tuberculosis patients into Irish hospitals and infirmaries. At this meeting it came out that the Irish Insurance Commissioners appointed—on their own initiative—12 medical men on the various County and Borough Insurance Committees not nominated by the medical profession. On the matter being explained to them seven of these practitioners resigned, but five have refused to do so. The main subject under discussion at present is how to provide sanatorium benefit, and apparently the Insurance Committees are finding great difficulty, especially in regard to the non-pulmonary or surgical cases. Some hospitals propose to take them in, others have decided against this course. The matter was under the consideration of the subcommittee of the conjoint committee of the Irish and British Medical Associations in Dublin last week, and the opinion of the majority was that if such cases were admitted into infirmaries or hospitals the staff who attended on them should be paid—a suggestion already made by the British Medical Association. The feeling is growing in Ireland that after Mr. Redmond's question to the Chancellor of the Exchequer on Oct. 24th medical benefits will be extended to Ireland, otherwise the greatest confusion will arise if Scotch or English insured workers come to Ireland. On the whole the medical profession in Ireland are not enthusiastic over the new terms offered by Mr. Lloyd George, as they see that what he gives with one hand he takes away with the other. Of course, as

medical benefits do not, at least as yet, extend to Ireland the profession in this country is not so concerned with the Chancellor's terms as are our colleagues in England and Scotland.

The Friendly Societies and the Profession.

The Friendly Societies in Dublin are struggling to rouse public feeling against the medical profession, and with this object in view it is proposed to hold a public meeting at the Mansion House at an early date. Meantime, the Poor-law guardians of the North Dublin Union have passed a resolution couched in extraordinary terms. They have, "in consequence of the action of the Dublin Medical Committee in refusing medical attendance to members of Friendly Societies," directed that in future no bodies be removed from the union to the schools of anatomy. They further threaten to break their contracts with their own medical officers and pensioned medical officers, if such are found to be "assisting the Dublin Medical Committee in their cruel medical boycott." In Limerick a union of the Friendly Societies has been formed, and advertisements have been issued for whole-time medical officers.

The Peamount Sanatorium.

The promoters of the Peamount Sanatorium, on the borders of the counties of Dublin and Kildare, have met with many difficulties. First, they had to face the strong opposition of the residents in the vicinity. Part of the new buildings were wrecked by a mob some months ago. An action to restrain the promoters from proceeding with their project is entered in the High Courts, and is expected to be heard this term. A more serious natural difficulty is now encountered. So far, it has not been found possible to obtain a water-supply suitable for drinking purposes, and, according to information given by Mr. Birrell in Parliament last week, all drinking water used at present has to be carted a distance of two miles. It is said that all attempts to find water in the Peamount demesne itself have failed. The fact that the Local Government Board advanced some £17,000 of public money for the erection of the sanatorium, without satisfying themselves that water was procurable, is giving rise to much criticism. Indeed, the Women's National Health Association, in choosing Peamount in the first instance, seems to have acted precipitately.

The Royal College of Physicians.

The annual meeting of the Royal College of Physicians of Ireland was held on Oct. 18th, St. Luke's Day, when the new president was elected. The choice of the College fell on Dr. Charles E. FitzGerald, who has been a Fellow since 1886. Dr. FitzGerald practises as an ophthalmic surgeon, and is surgeon oculist in ordinary to the King in Ireland, and consulting ophthalmic surgeon to the Richmond Hospital. On the 19th, the morrow of St. Luke's Day, the annual dinner was held in the College hall. A large number of Fellows and guests attended.

Royal Victoria Hospital, Belfast.

The medical session for the present winter began at this institution on Oct. 17th, when a most suggestive introductory address was delivered before a large audience by Dr. Thomas Houston. After an interesting *résumé* of the past history of pathology in the Belfast Medical School, Dr. Houston described in detail the methods of combating acute bacterial diseases.

Workhouse Medical Officers' Salaries.

A matter of great importance to Poor-law medical officers came before the Belfast guardians at their weekly meeting on Oct. 15th. A letter was received from Dr. George Elliott, honorary secretary of the Belfast Medical Guild, forwarding resolutions passed by the council of that body—

1. That in the opinion of the council the minimum salary for a qualified resident medical practitioner should be £130 per annum, with board and rooms, giving suitable accommodation for the position he holds.
2. That in the opinion of the council no qualified medical practitioner should accept less than £5 5s. per week while acting as locum tenens to any dispensary appointment.

In a covering letter Dr. Elliott pointed out that the expense of the medical curriculum had been more than doubled in recent years, and the standard required for examinations had been greatly advanced. A long report was also received from a subcommittee of the infirmary committee appointed to consider the question of the future appointments, &c., of resident medical officers under the board, with certain suggestions to make the position of these officers more attractive. A motion by Mr. J. Macintosh to fix the salaries of resident medical officers at £130 was put to the meeting, but an amendment was carried to the effect that the question of salary should be taken into consideration by the infirmary committee when it had obtained information on the matter from other unions.

Death of Brigade-Surgeon Thomas B. Moriarty, M.D.

With sincere regret the medical profession of Cork and the citizens generally last week heard of the death, at the age of 75, of Brigade-Surgeon Moriarty. Dr Moriarty was a student of the Cork Queen's College, and graduated in arts and medicine at the Queen's University. Soon after taking his degrees he entered the Army Medical Service, was stationed in India and on the West Coast of Africa, and went through the Afghan campaign. On retiring from the army he was gazetted Brigade-Surgeon and started private practice in Cork. Soon afterwards he was appointed surgeon to the city and county jails and also became physician to the Cork Fever Hospital. He was an ex-president of the Cork Medical and Surgical Society. He had decided literary tastes, and the annual medical reports of the Cork fever hospital written by him as senior physician were models of lucidity. In private life Dr. Moriarty was very highly esteemed. He was an excellent genial host and had many friends. Although it was notified that the funeral was to be strictly private, by kind permission of his relatives a very large number of the profession attended to show their respect for one who had been a dear friend and an honoured colleague.

Oct. 22nd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The French Congress of Medicine.

THIS Congress, the thirteenth since its foundation and the second since the creation of the Association of French-speaking Medical Men, was especially interesting. The President was Professor Chauffard. The opening meeting was held on the evening of Oct. 13th at the Sorbonne, under the presidency of the rector, M. Liard, who delivered an admirable address. Speeches were also made by M. Bar, the secretary-general of the association, M. Teissier, the secretary-general of the Congress, M. Chauffard, M. Stoicesco (on behalf of the foreign medical men), and M. Lanotot on behalf of the French-speaking profession, and M. Landouzy, the doyen. M. Lanotot invited the Congress to hold its next meeting in Quebec. The scientific meetings began on Oct. 14th at the Faculty of Medicine. In the morning the Congress discussed oxalæmia and oxaluria, on which subjects M. Loepfer and M. Lambling presented an elaborate report. Oxalæmia, it was stated, presents analogies in behaviour to gout, although quite different in nature; probably, also, it represents a true diathesis. The afternoon session was devoted to anaphylactic conditions in clinical medicine, and papers were read thereon by M. Landouzy, M. Bezançon, M. Achard, M. Armand-Delille, M. Lesné, M. Thibierge, M. Gougerot, and M. Courmont. On the 15th a discussion took place in the morning on acute infectious colics. Dr. Cade, of Lyons, revived the conception of typhlitis and perityphlitis, which have been not a little overshadowed by appendicitis of late. The conduct of the case, however, so far as the practitioner is concerned, remains the same. M. Cade further allotted a place in the origin of colitis to autogenous infections, through augmentation of the virulence of the ordinary intestinal parasites. According to M. Hutinel and M. Nobécourt, colitis of infectious origin in the infant is quite common from the second year. But the pathogenic germs are numerous and variable, and aid in various ways (poor alimentation and hereditary predisposition) in determining the degree of inflammation. The afternoon session was devoted to a long discussion on antityphoid vaccination. M. Chantemesse had performed 17,000 vaccinations in one year, giving four injections of serum to each vaccination. Professor Vincent, of Val-de-Grâce, from the results obtained with his polyvalent vaccine (cultures killed by heat) in Morocco, in Algeria, and more recently at Avignon, argued that the absence of any case of typhoid fever in vaccinated persons, even in the midst of epidemic foci, definitely

established its value. Dr. Granjux laid stress on the part played by fatigue in military epidemics. In these, observance of hygienic rules and rest, he said, would permit the neglect of serotherapy. He feared lest the use of vaccines, whose good results he did not deny, should occasion over-confidence and mask the dangers of over-fatigue. The excellent results obtained with the serum of M. Vincent were confirmed by MM. Jardin-Deltheil, Nègre and Reynauld, Combe and Louis, and Gille and Orticoni. On the 16th, the morning session, which was presided over by Professor Maragliano, was devoted to the discussion of communications by M. Carnot on the treatment of hæmorrhages, and of M. Nolf on the mechanism of coagulation of the blood. Communications were read also on the same lines by Sir Dyce Duckworth, on phlebitis and thrombosis; by M. Parisot, on hæmatopoietic serum; by M. Renon and M. Richet, jun., on the treatment of phlebitis by urotropine; and by M. Becq, on the prophylaxis of post-operative hæmatophilia. In another room communications bearing more particularly on tuberculosis were discussed by M. Bernheim, M. Gaussel, M. Rapin, and M. Lemoine. In the afternoon M. Léon Bernard discussed the indications for artificial pneumothorax, M. Milian spoke on "606," M. Paul-Emile Lévy detailed the good results that he had obtained by his re-education treatment in neurasthenia and the neuroses, and M. Guelpa read a very interesting study on the treatment of gout, drawing an interesting parallel between gout and diabetes.

The Nobel Prize.

The work of Alexis Carrel, which has gained for him the Nobel prize, amounting to about 195,000 francs, has been so fully dealt with editorially in THE LANCET of Oct. 19th that all that need be added here is to chronicle the general rejoicing of the French scientific world that this honour should have fallen on a Frenchman and a graduate of the Faculty of Lyons.

The Perils of Radiography.

The unfortunate nurse who was decorated for X ray injuries incurred in her devotion to duty, to whose case I referred in these letters recently, has since died. In the same hospital—the Salpêtrière—another victim is now found in the person of the chief, Dr. Infroit, whose hair, though he is only 40 years of age, has become white, his features haggard, and beneath whose left eye a disquieting sore developed a few days ago. Already he had suffered amputation of the fingers of his right hand, but he continued his work. Now more than one part of the surface of the hand is affected, a pustular eczema extending its ravages farther and farther. The surgeons are undecided whether to scrape the sore or to remove the hand. Meanwhile Dr. Infroit continues to direct the service.

The International Congress of Pædiatry.

This Congress, which took place in Paris this month, was largely attended. Professor Troitzky, of Kharkow, dealt with the labours of French pædiatricians during the last four centuries. M. Texier read a report on the anæmias of nurslings. After describing the condition of the blood, the medullary reactions, the deficient iron content in early years, the hæmolytic icterus of the new-born, the parasitic affections, the intoxications, and the serious pernicious anæmias, he discussed the therapeutics, dividing therapeutic agents into those stimulating the hæmatopoietic organs, and those restraining the hæmolytic processes. Other papers were those of M. Czerny, of Strasburg, on anæmia of alimentary origin; M. Müller, of Marburg, on the epidemiology and early symptoms of epidemic spinal infantile paralysis; M. Zappert, of Vienna, on the pathologic anatomy and experimental pathology of acute poliomyelitis; and M. Ombrédanne on the surgical treatment of the sequelæ of poliomyelitis.

The Hæmolytic Properties of Mushrooms.

M. Jacques Poinot and M. Vernier read recently before the Academy of Sciences a study of the blood-destroying properties of mushrooms. Speaking generally, this power, when it exists, is very intense in vitro and is markedly manifest also in vivo. The intravenous injection into an adult rabbit of less than ten drops of an extract of amanita phalloides Fr. kills the animal in a few seconds. On examination of blood taken immediately after the injection a cherry-red coagulation of the serum (hæmoglobinæmia) is observed, and the blood cells are destroyed even in hypertonic (10 to 11 per cent.) saline solutions. When the extract is given by the subcutaneous route, and in small doses, survival for some days may ensue, with the production of a true hæmolytic icterus. Amanita phalloides possesses the most marked hæmolytic power, but the greater part of the poisonous mushrooms have also an intense, though less marked, hæmolytic property. It is important to notice that many edible mushrooms also possess this destructive action on the blood. All parts of a hæmolytic mushroom possess this hæmolytic power. Varieties that do not possess the hæmolytic power when the mushroom is young and fresh may acquire it when old. This fact seems to be related to the presence of secondary bacterial hæmolysins, and explains the occasional cases of poisoning from mushrooms that are not absolutely fresh. In a general way heating lessens this hæmolytic property. It is entirely abolished after 20 minutes' heating in an autoclave at 120° C. in certain cases, but in others two or three applications are necessary. Boiling for five minutes over an open fire seems nearly always sufficient. The hæmolytic phenomena produced by mushrooms appear to be attributable to chemical changes, more or less complete, of a glucoside. They explain accidents that sometimes occur even when the mushrooms have been cooked; either the cooking has been insufficient or the hæmolytic toxicity (which varies in different kinds of mushrooms) is more marked. These phenomena demonstrate the necessity of subjecting mushrooms to a prolonged cooking at a sufficiently high temperature for the purpose of causing complete hydrolysis of the hæmolytic glucoside. The usefulness of cooking in oil is thus proved.

Heliotherapy.

A communication by Professor Poncet, of Lyons, has been read before the Academy of Medicine, on heliotherapy, in which he reported interesting results extending over a long period in tuberculosis, rebellious ulcers, retarded consolidation in fractures, and trophic troubles. Terraces, open corridors, slight pavilions attached to hospitals, and similar measures amply sufficed, he said, for this treatment, which was undoubtedly too much neglected in France.

Oct. 21st.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

A Congress on the Care of Infants.

A CONGRESS on the care of infants was lately held in Darmstadt, under the presidency of Baron Behr-Pinnow, Chamberlain to H.M. the Empress of Germany, and was honoured by the presence of the Grandduchess of Hesse. Dr. Langstein, of Berlin, read a paper on the subject of uniform training for nurses intended to have charge of infants, recommending a system of this kind in preference to the varying methods at present followed in the 35 existing training schools in Germany. He said that the time of training ought to be six months, and that admission to the training school ought not to be made dependent on the nurse having shown ability in passing a school examination, as certain medical men have advised, but only on her degree of intelligence and love of work. He was also of opinion that a State certificate should be given to special nurses for infants. Dr. Hoffa, of Barmen, recommended, on the contrary, that nurses for infants should only be chosen from persons possessed of good general knowledge. The second subject of discussion was the giving of lectures on infant nursing in public schools. Dr. Rosenhaupt, of Frankfort, said that the girls in the public schools ought to learn some details of the proper method of managing infants. Such instruction must be in accordance with the age of the pupils. The composition of milk could be taught in the classes for natural science or chemistry, and practical instruction could be given in connexion with the course in housekeeping. The teachers must, of course, themselves have a knowledge of the subject, and therefore lectures ought to be delivered in the training colleges for teachers. In the higher schools for girls medical men could eventually act as teachers. In some districts tuition in the care of infants was already given, as, for instance, in Düsseldorf, where trained nurses acted as teachers and went round the schools giving instruction. In some foreign cities also, such as Antwerp and New York,

similar educational facilities existed. The third subject of discussion was the question of professional guardianship for infants, by which was meant that, instead of a separate guardian for each individual illegitimate child, a general salaried guardian was appointed for all the illegitimate children of a town or district. Professional guardians had already been introduced in Leipsic, and had proved very useful. Their duty was to care for the infants not only from a legal but also from a hygienic point of view. They could devote more time to the work and had a better knowledge of the subject than some citizen who had been appointed by the magistracy as guardian and naturally did only the minimum required by the law. They might take care that the children were properly nursed, might find places in which the mothers, if homeless, could live after their confinement, and might see that the father made a sufficient allowance for the maintenance of the children. They sometimes worked in connexion with the dispensaries for the treatment of sick infants. The last subject on the programme was that of the so-called "crèches," or day nurseries. In the discussion attention was drawn to the fact that children who went home every night might eventually introduce infectious diseases into the crèches.

The Mothers' Home.

The Mutterhaus in Pankow, a suburb of Berlin, which is in connexion with the association for the protection of mothers, has issued its first report on the work of the institution from the date of its opening on Dec. 10th, 1910, until Dec. 31st, 1911. This home receives mothers, whether married or unmarried, and without reference to religious persuasion, charging the majority of them one mark (= 1*s.*) per day. In addition to the ordinary accommodation there are five free beds and some extra rooms in which the occupants pay five marks and three marks per day. During the first year, 6 married and 112 unmarried women were received, together with 130 infants. The mothers themselves do all that is required for their children, under the general direction of a trained nurse. The mortality was very small, as only nine infants died during the whole year. The home also undertakes to procure employment for mothers, who may remain until they have found work or situations. The children also may be left in the home for several years, and are then handed over to the care of trustworthy families if the mothers are unable to provide for them.

Grievances of Nurses.

At a congress of German women held lately at Gotha the position of nurses was one of the subjects of discussion. A matron who holds an appointment at Dortmund said that the work to be done by nurses was in many cases very exacting and led to early breakdown. She stated that 11, 12, and even 13 hours of daily work were not uncommon in hospitals, but the highest record for overwork was held by a nurse who in a letter had complained that she had sometimes to work 38 hours continuously, because when on night duty she was not always relieved from her day work. At a congress of nurses held in Cologne it was stated that 3000 German nurses have never a whole holiday. The residential accommodation for nurses, the food, and the salary were often unsatisfactory, and the pension for invalids was too small and uncertain. Restrictions were often placed on necessary out-door exercise, as the nurses even in their hours of leisure were not allowed to leave the nurses' home without special written permission. Nurse Karll, the president of the Nurses' Union, said that of the 30,000 nurses in Germany only a small number belonged to the union, and that therefore the establishment of local branches of the union has hitherto been rather difficult. Nurse Reichel said that the worst conditions for nurses existed in private sanatoriums belonging to medical men. Great hardships had also to be endured in certain private homes for nurses where the nurses were often overworked by so-called matrons, sometimes of an inferior social standard, who tried to make as much money as possible out of the work of their sisters. The position of male attendants in public lunatic asylums has been also discussed in a daily newspaper by Herr Delius, of Halle, a member of the Prussian Diet. He said that in Prussia there were 346 lunatic asylums and sanatoriums for mental patients. The salaries of the attendants varied very much, and were not even the same in institutions belonging to the same provincial corporation. In certain asylums the provincial authority left the payment of the attendants to the discretion of the managing director. On an average the salary began at 450 marks (= £22 10*s.*) per annum, rising to 1000 marks (= £50), married attendants receiving an extra allowance of 150 marks. In a few asylums the maximum salary was 1450 marks. Free food and uniform was, of course, given besides the salary. The hours of work were very long, beginning at 5 or 6 A.M., and ending as a rule at 8 P.M. Meals were taken together with the patients. Holidays were allowed only in some asylums. In most asylums the attendants had only a day free, but in some only the evening from 5 P.M. A free Sunday was allowed only to married attendants, and that only every fortnight. The attendants had formed themselves into a union, but the asylum managers had tried to hinder their work as much as possible and declined to employ members of the union. Finally, Herr Delius urged that Parliamentary interference was necessary for improving the condition of the nursing profession.

Oct. 21st.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Medical Training College for Indian Women: The Delhi College Project.

THE Maharao of Kotah desiring to commemorate, by a gift of a lakh of rupees for the benefit of the women of India, the Durbar visit of the Queen-Empress to his State, Her Excellency Lady Hardinge decided to use it as the nucleus of a fund for founding at Delhi a Medical College and Hospital for Women. Owing to the fact that they can at present receive instruction only in men's colleges and in mixed classes, it has hitherto been found impossible to get enough women of the better class to take up the medical profession, though women practitioners are required to alleviate the sufferings of those classes of Indian ladies who do not attend the public hospitals or call in male practitioners. Financial support is promised by many native princes, through whose generosity half the initial sum of 15 lakhs required for buildings and equipment has been raised. The Government of India will also be asked to help towards the recurring and maintenance charges. If this project succeeds Lady Hardinge will merge into it her scheme for training Indian women as nurses and midwives for district work among women where female medical aid is now lacking, for cases of illness in private families, and as skilled children's nurses for Indian homes. While no public appeal for subscriptions is made at present, Her Excellency would like it known what is on foot.

The Health of the Punjab.

The year 1911 was exceptionally healthy in the Punjab, the principal factor being the decrease of malaria due to the deficient rainfall during the monsoon. The usually feverish months of September and October showed the lowest death-rates of the year, the reduction in mortality from "fever" being 40,000. The sporadic outbreaks of cholera and small-pox resulted in no serious increase of mortality, but the plague record is less satisfactory. The prolonged cool weather in the early summer was peculiarly favourable to plague, from which there were 300,000 deaths during the year. The Lieutenant-Governor, reviewing the annual report of the sanitary administration, regards the mortality from plague as to some extent a measure of our failure to carry the people with us in our efforts at sanitary reform, but he considers the success achieved in keeping the Durbar area free from plague encouraging, and eulogises the work of the plague staff. He refers to the use of iodine, internally and externally, in plague, and to a simple method, elaborated in Faridkot, of exterminating rats by bhusa smoke blown into their holes. The fact that the actual Census population was only 0·9 per cent. in excess of the estimate made from the birth and death returns speaks well for their general accuracy. Of the four largest towns in the Punjab, Multan and Lahore showed a death-rate lower than the provincial average, Amritsar and Delhi a higher one. The municipal committee of Delhi has now agreed to appoint a separate full-time health officer of the city. Attention is called to the successful experiments in well-sinking, and particularly

to the invention of strainer tubes for use in percolation wells, which should go far to solve the problem of a good drinking supply for this province.

Dispensary for Bombay Jews.

Sir Jacob Sassoon has decided to place in trust for providing a dispensary for the poor Jews of Bombay one lakh of rupees and to pay the initial expenses of equipment. The dispensary is to be named after the late Lady Sassoon.

Tuberculosis in India.

In accordance with the decision arrived at by the meeting of the executive committee of the King Edward Memorial Sanatorium for Consumptives held in Allahabad in February patients began to be admitted in May as far as the existing buildings provided for their accommodation. By June 15th more patients had presented themselves than could be provided for. Every available place of accommodation, including tents, has been filled as soon as ready, and all further applications have had to be put aside and registered for the future. All cases except one have been cured or improved. The works, which will be completed by March next, will accommodate 44 patients (including three Europeans), as well as the superintendent, matron, two nurses, a sub-assistant surgeon, and 32 servants and friends of the patients. Extra accommodation for 20 or 30 patients can temporarily be provided in tents.

Small-pox in Bengal.

During the official year 1911–12 there was a decrease of small-pox in the old province of Bengal, the total deaths being only 3818, as against 6174 in the previous year and 25,582 in 1909–10. In consequence of this, writes Major W. W. Clemesha, I.M.S., in his annual report on vaccination, there was a decrease of 26,079 re-vaccinations. It is satisfactory to note, however, that there was an increase of 45,705 in the primary vaccinations. Evidently the vaccination work of past years is producing an effect.

Combined Indian Hospitals.

The Government of India has sanctioned, with effect from August 13th, 1912, a subordinate charge allowance to the sub-assistant surgeon of the Indian Subordinate Medical Department in charge of the central store and office of the senior medical officer, Indian Medical Service, at all stations where the combined system for Indian troops has been introduced, such allowance to be on a sliding scale of Rs.5 per mensem for each Indian cavalry or infantry unit in the station, subject to a maximum of Rs.20 per mensem. This allowance is in addition to the recent general increase of pay in this branch of the service.

Malaria Classes in the Punjab.

A grant of Rs.2500 is being made by the Punjab Government towards the necessary apparatus for the malaria classes which began in September for assistant surgeons and sub-assistant surgeons at present on plague duty, and conducted by Major E. L. Perry, I.M.S., chief malaria medical officer.

Vaccination in the Punjab.

The notes on vaccination in the Punjab during 1911–12 show a considerable increase in the number of operations performed—from 765,075 to 892,289—over the figures of the preceding year. The number of persons vaccinated was 882,844, as compared with 760,472 in 1910–11. The increase is ascribed to the prevalence of small-pox in the Punjab throughout the year, more particularly in Lahore and Delhi. The Lieutenant-Governor regretfully records his agreement with the Sanitary Commissioner's opinion that the experiment of house-to-house vaccination should be continued only in places where there is a distinct demand for it, and where either it can be carried out without any increase to the ordinary establishment or the local authority is prepared to meet the extra expenditure. The returns from native states show that vaccination is becoming increasingly popular there. The demand for vaccine lymph continues to increase.

Small-pox Hospital at Simla.

The Simla municipal committee has sanctioned a scheme for the erection of a small-pox hospital for Europeans in the station.

The Water-supply of Hyderabad.

His Highness the Nizam has ordered the immediate construction of a reservoir, costing £240,000, for flood protection and water-supply to the city of Hyderabad. The waterworks will cost £360,000, making a gross total of more than half a million sterling.

Analytical Laboratory at Karachi.

The building for the laboratory of the chemical analyst for Sind and neighbouring administrations at Karachi has been completed and is now being fitted out under the supervision of Captain B. Higham, I.M.S.

Opium-eating in India.

According to its latest opium resolution the Government of India is willing to carry out the recommendations of the Shanghai Opium Commission of 1909, but not to deprive the moderate user of opium in India of his mild stimulant, which would inevitably drive him to far more harmful drugs or to alcohol. The resolution draws a clear line between the practices of smoking and eating opium. The former, by no means a national Indian vice, is to be subject to much stricter regulation. All public gatherings for opium-smoking are to be rigidly suppressed as well as the manufacture of opium-smoking preparations, save by an individual in small quantities for his private consumption. Local governments are empowered at their discretion to reduce the present maximum limit of private possession of opium-smoking preparations. As to opium-eating, as distinct from smoking, the Government of India, while declining to introduce any system of official sale, declares itself in favour of raising the price of opium so as to make its consumption a luxury, and of equalising prices as between different provinces. Minor reforms also are suggested.

Oct. 5th.

THE NATIONAL INSURANCE ACT.

THE GENERAL MEDICAL COUNCIL AND THE REGULATIONS.

ON Sept. 12th the General Medical Council received through the Privy Council copies of the Draft Regulations for the administration of medical benefit. These were considered by the National Insurance Act Committee which was appointed by the Council out of its own number on June 4th last. The Committee was requested to make observations upon the Draft Regulations, and in so doing it limited its consideration to details, either concerning the special function of the Council or having a direct bearing on the efficient practice of medicine. On Sept. 19th the Committee issued a memorandum embodying various criticisms and suggestions, which was submitted to the Insurance Commissioners. The Committee observed that the system of administration established by the Regulations would have far-reaching effects on the conditions of professional training and practice, which it would be the duty of the Council to take note of; but in the meantime the Committee had no authority to express on behalf of the Council any general opinion on the effect of the Regulations as a whole.

The Committee had before them the Draft Regulations No. 33 (sixth proof), and their remarks applied to these only. In their acknowledgment, dated Oct. 9th, the Insurance Commissioners expressed their thanks to the Council for the exceedingly useful and valuable suggestions made in the memorandum, and claimed that, with the exception of any provision for institutional treatment, all the points of substance raised in the memorandum had been met in the Regulations as issued.

A comparison of the 14 or 15 points raised by the Committee in their memorandum with the Provisional Regulations published in THE LANCET of Oct. 5th largely bears out this contention. Words complained of have, for the most part, been omitted, and while three or four recommendations have been ignored, evaded, or only carried out in part, most of the Committee's proposals seem to have been granted.

THE NATIONAL MEDICAL UNION AND THE REGULATIONS.

We have received from the National Medical Union, through its secretary, Mr. J. Webster Watts, 5, John Dalton-street, Manchester, a long detailed criticism of the Provisional Regulations, dated Oct. 22nd, 1912, and therefore written before the Chancellor of the Exchequer made his statement in the House of Commons. The Regulations are

first examined to see to what extent, if at all, they concede the "six cardinal points." Then various provisions in the Regulations and in the Schedules are subjected to close scrutiny, and many of them receive hostile comment. Certain suggestions are made, and some of the provisions are approved, but generally the criticisms are destructive. The summary and conclusion of the document is as follows:—

The impression left on the mind by a study of the Regulations is that they may fairly be said, in the main, to carry out the intentions of the Act. The apprehension that the first realisation of these intentions caused the profession will be intensified by the Regulations. The conditions of work contemplated are plain to be understood. Private medical practice amongst the poorer classes would be undermined. At every turn there would be bureaucratic interference. The varying forms to be filled up, the official accounts to be rendered, and the amount of gratuitous committee work to be performed will be amongst the minor fruits of the system set up by the Regulations. The financial return to the doctor under the proposed arrangements, so far from being the certainty so often claimed, will be seen to be at the best a very doubtful and variable quantity. Finally, for no conceivable reason should the profession be induced to agree to a system in which their lives would inevitably be open to be continually harassed by the institution described as the "Complaints Committee." The root fault in the whole scheme is the statutory obligation to attend which is placed upon the doctor. That is a new thing. No doctor enters the profession without meaning to work. Most enter for the love of it, and all realise the moral obligation to attend in cases of emergency. But the exercise of discretion is claimed. Medicine is a delicate and personal art, and the relationship between patient and doctor is best left to the parties concerned. The Disciplinary Regulations would destroy the old kind of relationship—an essential one for mutual confidence and respect—and would substitute for it an entirely unnecessary legal obligation. Mr. T. Jenner Verrall, now chairman of the Representative Meeting of the British Medical Association, speaking at the Liverpool Representative Meeting, used these words: "It is most unfortunate that all through our policy we have insisted more on our requirements than on the issues underlying them."

The profession's requirements are the six cardinal points, and they only have reference to the Act of 1911. The issues underlying them are of wider application. That the relation between patient and doctor shall retain its private and voluntary character is one, and perhaps the chief. It cannot be too clearly stated that that is a perfectly possible condition of a sickness insurance scheme, even of a State sickness insurance scheme. The State has entered the field with a large offer of money for the provision of medical benefit. The profession welcomed the intention, "provided that the conditions of service tend to develop higher efficiency, &c." (B.M.A. Representative Meeting, May, 1911, Minute 30.) This they do not do, but the contrary; and it is therefore to the interests of the nation that the profession should decline to serve.

"We do not decline to work any possible Insurance Act," said Mr. G. A. Wright, chairman of the National Medical Union, at the mass meeting in Manchester last year. "We would be prepared to work even this Act were the conditions to be so amended as to be satisfactory." But they have not been so amended. On the contrary, the Regulations bring out the objectionable features into higher relief. A unanimous and firm refusal to form panels is the only tenable position which the profession can take up. The situation is complicated by the promise of medical benefit by Jan. 15th. True, no responsibility falls on the profession for that promise, but the clubs have been given up and the old system abandoned, and some *modus vivendi* must be reached. Were the Government to decide to act under Clause 15 (2) of the Act and Regulations 14 and 15, and to apply the money voted for medical benefit to assist the insured people to obtain private treatment, then the temporary difficulties would melt away. True, such a settlement would not be in the nature of a permanent one, although in such districts as South-East Lancashire, where an efficient system of private practice prevails, it would probably be recognised generally as all that was necessary. In other districts, which are already ripe for a higher degree of organisation, a different distribution of the money would be desired. Meanwhile there could be undertaken the gradual and considered organisation of the profession, largely carried out by themselves under the guidance of their best minds, but in cordial coöperation with the Government. The organisation that is needed is concerned less with business arrangements and with discipline than with the medical art in all its various branches—an organisation manned by the whole profession, and including the whole of the poorer part of the community, women and children as well as men, within its scope. The system would be of gradual growth, and, in the fruition of the ideal, the doctors would work together, like the members of a great hospital staff, for the good of their patients.

The Remuneration of Pharmacists under the Act.

The Pharmaceutical Standing Committee on Insurance was received recently by the Insurance Commissioners at Buckingham Gate. The question of whether the remuneration of pharmacists under the Act should be calculated by reference to a tariff was discussed, and a model tariff, which had been prepared by the Committee, was submitted to the Commissioners. It was agreed that the Commissioners could not approve any tariff in such manner as to make its adoption binding on Insurance Committees generally. But the Commissioners were willing to accept the principle of remuneration by reference to a tariff and to accept a model tariff (if any such tariff could be agreed) as being of such a nature that if submitted by any Insurance Committee as part of their arrangements under Section 16 of the Act the Commissioners would be prepared to approve it. The Commissioners further accepted the principle that there should be, in the case of preparations dispensed, a separate charge for each item of the prescription, for the container (if supplied at the cost of the Medical Benefit Fund), and for the work of dispensing. The Committee appointed Messrs. P. F. Rowsell, J. P. Gilmour, D. Arnott, E. S. Waring, and W. J. V. Woolcock, as a subcommittee to discuss and arrange the details with the Commissioners.

The State Medical Service Association.

Although the idea of a State Medical Service is much older than the Government's scheme of National Health Insurance, the newly-formed State Medical Service Association, of which we have received short particulars, may be said to have arisen out of the National Insurance Act. It has been stated that the Government is contemplating the formation of a State Medical Service as an alternative to the administration of medical benefit under the Regulations, in the event of the medical profession refusing to accept the terms and conditions offered, and it is to be noted that several lay members of the Advisory Committee have declared themselves strongly in favour of such a service. It is, therefore, a matter of interest to record that a movement has now definitely been started within the medical profession to promote a State Medical Service. We learn from the honorary secretary, Mr. Charles A. Parker, that the first general meeting of this association, which was inaugurated at Liverpool in July last, was held in London on Oct. 25th. The secretary reported that as a result of sending out 625 circulars 135 medical men had become members, and a few laymen. The chairman, Professor Benjamin Moore, laid stress on the fact that the great aim of the association was gradually to educate the medical profession and the public to the need of a State Medical Service which should put professional advice at the ready disposal of every member of the community who needed it with a view to the prevention of disease. An executive committee was appointed, with Dr. G. A. Heron as chairman, and arrangements were made for the formation of district branches and for the issue of a weekly journal as the official organ of the association.

THE BRITISH MEDICAL ASSOCIATION: THE POSITION OF THE MEDICAL PROFESSION IN RELATION TO THE ACT.

It will be remembered that at the annual Representative Meeting of the British Medical Association in July, following upon the breaking off of all negotiations with the Government by the Association, a State Sickness Insurance Committee was appointed by resolution to watch the interests of the profession in relation to the National Insurance Act and to report on the whole situation to the Council of the Association. By the same resolution the Council were instructed to report as soon as possible to the Divisions and to a Special Representative Meeting.

The State Sickness Insurance Committee—consisting of 12 members elected by groups of representatives, four *ex-officio* members (viz., the President, the Chairman of Representative Meetings, the Chairman of Council, and the Treasurer), five coöpted additional members, and two representatives of registered medical women—met regularly up to Oct. 24th under the chairmanship of Dr. J. A. Macdonald, chairman of the Council of the Association.

The report of the committee, a long and most carefully reasoned document, consisted: (A) of a report of the action taken by the State Sickness Insurance Committee in issuing model schemes for the treatment of tuberculosis, and for a Public Medical Service, and set out the well-known position taken as to the administration of sanatorium benefit, the constitution of the Advisory Committee, and the resignation of contract appointments; (B) of a statement comparing the Provisional Regulations as to medical benefit with the cardinal principles of the Association and with decisions of the State Sickness Insurance Committee as to matters which should be included in the Regulations; and (C) of a report of the

Council on the present position of the medical profession in relation to the Act and on future action.

The Council of the Association met at the offices of the Association at 10 A.M. on Thursday, Oct. 31st, to consider the report of the State Sickness Insurance Committee. The subdivision (A) of the report comprising 41 paragraphs, being mostly a *résumé* of occurrences, underwent little alteration.

The following is the report of the Council, under subdivisions (B and C) which has now been sent to the Divisions and the Representative Body of the Association:—

B.—STATEMENT COMPARING THE PROVISIONAL REGULATIONS AS TO MEDICAL BENEFIT WITH THE CARDINAL PRINCIPLES OF THE ASSOCIATION AND WITH DECISIONS OF THE STATE SICKNESS INSURANCE COMMITTEE AS TO MATTERS WHICH SHOULD BE INCLUDED IN THE REGULATIONS.

42. It is proposed in this section of the Report to examine the Provisional Regulations[1] of the Commissioners under two aspects—namely, (I.) How far do they, in conjunction with the Act itself, satisfy the cardinal principles of the Association; and (II.) How far do they cover the other points[2] brought before the Commissioners by the Members of the Advisory Committee nominated by the Association?

(I.) HOW FAR DO THE REGULATIONS, IN CONJUNCTION WITH THE ACT, SATISFY THE CARDINAL PRINCIPLES OF THE ASSOCIATION?

43. The cardinal principles were most recently and fully laid before the Commissioners in the following letter sent to the Commissioners by the State Sickness Insurance Committee on Feb. 29th, 1912:—

Offices of the British Medical Association,
429, Strand, London, W.C.
Feb. 29th, 1912.

SIR,—I am instructed to inform you that at the Special Representative Meeting of the British Medical Association, held at the Guildhall, Feb. 20th–22nd, the following resolution was unanimously passed:

That this Representative Meeting direct the Council to inform, in plain and unmistakable language, the Commissioners appointed under the Insurance Act, 1911, that unless the minimum demands of the Association be embodied in the Regulations to be issued by the Commissioners, in such a manner as shall be effectual and permanent with a view to having the same embodied in an amending Act, it is the intention of the British Medical Association to call upon all its members and upon all other medical practitioners to decline to form panels or undertake any other medical duties which may be assigned to them under the Act, in conformity with the Undertaking which has already been signed by over 26,000 medical practitioners.

I am to point out to you that the minimum demands of the Association mentioned in the above resolution comprise:—

1. An income limit of £2 a week for those entitled to medical benefit.

2. Free choice of doctor by patient, subject to consent of doctor to act.

3. Medical and maternity benefits to be administered by Insurance Committees and not by Friendly Societies. In connexion with the question of the method of administration of medical benefit the Representative Meeting resolved that all questions of professional discipline should be decided exclusively by a body or bodies of medical practitioners, and that the power of considering all complaints against medical practitioners should be vested in the Local Medical Committee, with a right of appeal to a Central Medical Board to be appointed for that purpose.

4. The method of remuneration of medical practitioners adopted by each Insurance Committee to be according to the preference of the majority of the medical profession of the district of that Committee.

5. Medical remuneration to be what the profession considers adequate, having due regard to the duties to be performed and other conditions of service.

After careful consideration the Representative Meeting resolved that the policy of the Association be to claim 8s. 6d. as a minimum capitation fee, not including extras and medicine, for members of Approved Societies, and to claim the recognition of payment per attendance, in which case the fees must be on such a basis as shall be deemed an equivalent by the State Sickness Insurance Committee, with recognition of a £2 maximum income limit.

6. Adequate medical representation among the Insurance Commissioners, in the Central Advisory Committee, and in the Insurance Committees, and statutory recognition of a Local Medical Committee representative of the profession in the district of each Insurance Committee.

On behalf of the British Medical Association, I am instructed to lay these important points before you and to inform you that they constitute the irreducible minimum demanded by the Association.

Another subject which received the special attention of the Representative Meeting was the question of dispensing. The Association is of opinion that dispensing, as hitherto, should be done or arranged for by the medical practitioner for his own patients, should he so desire, payment to be made according to the scale of prices fixed by the Insurance Committee in accordance with the terms of the Act.—I am, etc.,

ALFRED COX, Acting Medical Secretary.

The Secretary, National Health Insurance Joint Committee, Buckingham Gate, S.W.

INCOME LIMIT.

(1) "*An income limit of £2 a week for those entitled to Medical Benefit.*"

44. This was further elaborated in the document placed before the Commissioners by the medical members of the Advisory Committee nominated by the Association, as follows:—

(a) *General procedure.*—3. That provision should be made in the Regulations for the following:—(a) That all or any of the following, namely, the medical practitioner, the insured person, the local Insurance Committee, or the local Medical Committee, shall have the right of challenging the title of any insured person to obtain medical benefit, in the form of medical attendance under any scheme administered by the Insurance Committee, on the ground that his income exceeds a limit fixed by the Insurance Committee. (b) That the onus of proof that an insured person is entitled to medical benefit, in the form of medical attendance, should rest on the insured person. (c) That in such cases the Insurance Committee shall require a signed statement from an insured person showing his weekly wage, countersigned by his employer, and also showing his income from other sources, if any.

45. The Regulations give no instructions to Committees with regard to an income limit of general application to all those insured persons on whose behalf the Committee shall make arrangements for medical treatment, as was laid down in Minute 42 of the Special Representative Meeting, February, 1912. Power is given, however, to each Committee to fix, after consultation with the Local Medical Committee, any income limit it may desire, and to require all those whose incomes exceed such limit to make their own arrangements for obtaining medical treatment. The regulations require the surrender of the principle of central bargaining and leaves it to the profession in each area to obtain such an income limit as they are strong enough to secure.

46. Regulations 9, 13, and 23 (1.) make it clear that an income limit, other than that stated in the Act, may be imposed, and if this is done the administrative details are in the main those formulated by the Association in the document presented to the Advisory Committee.

47. The right of challenge is given to the Local Medical Committee, or, where there is no such Committee, to any practitioner on the panel, and also to any Approved Society or association of deposit contributors, or to any person or firm supplying drugs or appliances (R. 13 (4)).

48. When any local income limit is fixed, the Committee may exempt certain insured persons or classes of insured persons from the obligation to make their own arrangements (R. 13 (1.)). This provision for exemption would enable groups of workmen, such as miners, &c., to be dealt with under special arrangements, and it would seem possible under this Regulation to differentiate, as regards income, between married and single men, between persons with families and those without, and to make such other adjustments as may be found necessary owing to the character of the population. On the other hand, it should also be borne in mind that this exemption clause might be operated so widely as to render ineffective the operation of a local income limit.

49. When an insured person is required to make his own arrangements the Insurance Committee must contribute towards the cost of his medical attendance the sum available for his medical benefit in one of two ways (R. 15). If he enter into a contract to obtain treatment, as, for example, through a Public Medical Service, the Committee must pay the whole or a part of the sum contracted to be paid by him in obtaining medical treatment. If he make his own arrangements for treatment on the private practice basis the Committee must pool the individual sums available for the medical benefit of all those persons taking this course and must pay their bills, on a scale of fees to be fixed by the Committee, so far as the pool will allow. It is not clear, however, from the wording of the Regulations that proper safeguards are set up to ensure that the amount paid to these classes of persons on behalf of their medical treatment will reach the doctor.

50. If, notwithstanding the announcement of the income limit, it is found that an insured person whose income exceeds the limit is taking advantage of the normal arrangements made by the Committee, various bodies and individuals as mentioned in paragraph 6 may dispute the right of such person to obtain treatment in this way. If challenged, the onus of proof is put entirely upon the insured person, who is required within a specified period to satisfy the Committee that his income is below the limit, or alternatively to make his own arrangements. Section 2 (1) of the Model Rules issued by the Commissioners concerning the conduct of persons in receipt of medical benefit provides for the infliction of a penalty by Insurance Committees upon insured persons for any imposition or attempted imposition in respect of medical benefit.

FREE CHOICE.

(2) "*Free Choice of Doctor by Patient subject to Consent of Doctor to act.*"

51. This cardinal principle was further elaborated in the document above referred to, as follows:—

(a) *Publication of right to.*—36. That provision be made in the Regulations whereby, in order to bring to the knowledge of all insured persons their right to free choice of doctor, a notice to this effect shall be hung in conspicuous places in factories, offices, and club-rooms of every Approved Society, and of any organisation availing itself of Subsection 15 (4) of the Act.

(b) *Time of exercise of choice.*—37. That provision be made in the Regulations whereby, in areas where a capitation system of payment of medical practitioners is adopted, free choice of patient by doctor and free choice of doctor by patient may be exercised twice a year, namely, in the months of June and December.

(c) *Right to refuse to accept person on list.*—38. That the Regulations contain a provision enabling a registered medical practitioner to refuse attendance upon any insured person.

52. In response to the demands of the Association, the right of free choice, which was not contained in the Bill as introduced, was accorded in the Act with the possible exception of the restriction imposed by the Harmsworth amendment. The effect of the introduction of that amendment has been held by some to offer an inducement to insured persons to join an approved institution which employs whole-time medical officers. Others are of opinion that however much the profession generally may deplore the existence of such institutions, the fact that an insured person may deliberately select one of them cannot be said to restrict his freedom of choice. At any rate, any restrictions of the right of free choice inherent in that amendment are not removed by the Regulations. It should be noted that an "institution" is defined in the Regulations as follows:—"*Part* I., 2 (1):—'Institution' means a system or institution existing on the 16th December, 1911 (the date of the passing of the Act), and providing medical attendance and treatment."

53. The exercise of the right of free choice for the patient is provided for as follows: (a) Preparation of list showing all practitioners who have signified their desire to undertake treatment (R. 12 (1.)); (b) publication of announcement in newspapers as to places where copy of list may be seen, including a statement as to right of insured persons

[1] See THE LANCET, Oct. 5th, p. 979.

[2] See Brit. Med. Jour. Supplement, July 6th, 1912, or pp. 274–284. Annual Representative Meeting Minutes, 1912.

to select a practitioner on panel or to obtain their treatment in some other manner (R. 17); (c) duty of patient to present form of application for treatment to practitioner of his choice (R. 18 (1.)); (d) duty of practitioner to notify whether he accepts patient or not (R. 18 (2)); (e) furnishing by Insurance Committee to practitioner of a copy of list of patients (R. 18 (4)); (f) right of patient to change his doctor in the ordinary way at end of year (R. 18 (6)), or at other times by consent of both practitioners concerned (R. 27 (a)); (g) under payment per attendance system, right of patient to present a voucher to practitioner of his choice (R. 19 (1)); (h) insured person coming to reside in county during course of year to choose practitioner from list or by presenting voucher (R. 23 (h)); (i) persons coming to reside temporarily in county to have right of selecting any practitioner on list of those who have declared their willingness to attend such persons (Rs. 44 and 45).

54. As regards the approved institutions, the following safeguards as to free choice apply, in addition to such of the above as are applicable: (i) persons who have joined institutions must be allowed to terminate their arrangements with them at certain times without incurring any pecuniary loss or other penalty (R. 16 (2) (i) (b)); (ii) person selecting an institution as the method by which he desires to obtain treatment must fill up special form for the purpose, and send it to the institution (R. 20 (i) (b)); (iii) members of institutions wishing to change during currency of list have same facilities for doing so as those who employ doctor on the panel (R. 27).

55. A point of some importance in connexion with freedom of choice of doctor by patient is the question of mileage. According to R. 46 (2) no mileage will be paid where the services of a practitioner resident within the prescribed distance from the patient are available. This certainly restricts the free choice of doctor, but as presumably there will be no objection to the patient himself paying mileage it is probable that distance will not restrict free choice any more or any less than it does at present.

56. The right of a doctor to decline to attend a patient is provided for by (a) right of practitioner to reject application of a person to be put on his list (R. 18 (2)); (b) right to decline to continue arrangement at end of year (R. 18 (5)); (c) right to decline voucher of person presenting it under payment per attendance system (R. 19 (i)); (d) power of arranging, during currency of medical list, for transfer of patient to another doctor with the consent of both patient and doctor (R. 27 (a)).

57. The method is apparently to be settled locally. The guidance is given in the Regulations (R. 18 (3)).

58. It is to be noted that the provision for transfer of the whole or part of the list of one practitioner to another would meet the case of the sale of a practice (R. 27 (d)).

Administration of Medical Benefit.

(3) "*Medical Benefit to be Administered by Insurance Committees and not by Friendly Societies.*"

59. This point was granted the Association in the passage of the Bill through Parliament. The administration of medical benefit is entirely in the hands of the Insurance Committees, but the Association has always contended that the representatives of the insured persons still have control in this matter, as they constitute a majority of the members of Insurance Committees. (For present position as regards representation of profession, see Table in par. 78, p. 18.)

Professional Discipline.

"*All questions of professional discipline should be decided exclusively by a body or bodies of medical practitioners, and the power of considering all complaints against medical practitioners should be vested in the Local Medical Committees with a right of appeal to a Central Medical Board to be appointed for that purpose.*

60. While the above demand of the profession has not been completely met, an endeavour has been made to satisfy the desires of the profession while meeting the public demand for some representation of public interests on the tribunals established to hear complaints in which medical practitioners may be involved.

61. So far as purely professional matters are involved—i.e., charges by one medical practitioner against another in matters affecting the efficiency of the service—these must be dealt with by the Local Medical Committee alone without the intervention of the Local Insurance Committee. The Local Medical Committee may apply to the Commissioners to remove the practitioner from the panel or "may take such other action as they may deem proper in the circumstances" (R. 49).

62. Charges brought by a patient against a practitioner, or by a practitioner against a patient, must (R. 48) be investigated by a Committee of Complaints composed of:—(i.) Three persons appointed by and from the members of the Committee who represent insured persons; (ii.) three persons appointed by the Local Medical Committee, or if no Local Medical Committee exists, by the practitioners on the panel; (iii.) a chairman selected from those members of the Committee appointed respectively by the Council of the county and by the Commissioners, who are neither insured persons nor practitioners, the selection being made by the six persons appointed as above mentioned, or in default of selection being made by those persons, by the members of the Committee appointed respectively by the Council of the County and by the Commissioners.

63. The procedure laid down for the hearing of complaints is of a nature which by its formality would appear to discourage petty complaints—e.g. (a) the complaint must be in writing (R. 48 (3)); (b) the proceedings before the Committee of Complaints are private (R. 48 (5)); (c) the secretary or other officer of the Local Medical Committee may be present and also any other person who may be admitted for the purpose of assisting either party in presenting his case, provided he be neither solicitor nor counsel (R. 48 (5) (d)); (d) the Committee of Complaints presents a written report to the Insurance Committee. No provision is made for privacy at this stage, and that Committee must accept as conclusive the finding of facts as contained in the report (R. 48 (7)), the penalty, if any, being adjudged by the Insurance Committee and not, as the Representative Body recommended, by a body of medical practitioners. The penalty may be (a) as far as the practitioner is concerned (1) report to Commissioner; (2) transference of patient to another doctor; (b) as far as patient is concerned (1) transference to another doctor, (2) fine, (3) suspension of medical benefit (Model Rule 2).

64. In addition the Model Rules provide for the penalising of persons who make frivolous or vexatious complaints. The probability of complaints of any kind is lessened by the fact that a change of doctor can be effected with comparative ease, and this provision would naturally be taken advantage of in cases which, without this facility, might well lead to friction or even to formal complaint.

65. The central machinery for inquiry into complaints against doctors on the panel is as follows (R. 51):—The Joint Committee of the Commissioners appoint 16 medical practitioners as a panel from whom they select two for the purposes of any inquiry. To these two are added by the Commissioners two other persons, one of whom must be a barrister or a solicitor, and these four form the Enquiry Committee. The chairman is chosen by and from the Committee but has no casting vote. In choosing the original 16 practitioners, who must include in their numbers practitioners having special knowledge of the several branches of medicine and surgery, as well as general practitioners, the Commissioners will consider suggestions from any body which appears to them to be representative of the profession.

66. Either party to the case may be represented by counsel or solicitor or by any member of his family, or by any officer or member of any Society to which the person may belong. This would enable, for example, the British Medical Association, or any of the medical defence societies to assist their members. The Inquiry Committee submits to the Commissioners a report on the facts as established by the evidence and the inferences which the Inquiry Committee may drawn therefrom, but no recommendation as to any course of action. The Commissioners apparently decide on the strength of this report whether the practitioner is or is not to be removed from the panel.

67. That while the proposed tribunal would not appear to offer a measure of security for a fair inquiry, no regulations affecting the position of a doctor on the panel can be satisfactory to the profession which do not provide for a right of appeal to a specially appointed medical tribunal.

Method of Remuneration.

(4) "*Method of Remuneration of Medical Practitioners adopted by each Insurance Committee to be according to the preference of the majority of the medical profession of the district of that Committee.*"

68. The method of remuneration is to be determined by the Insurance Committee after consulting the Local Medical Committee (R. 6 (1)). As the amount of money to be distributed to the medical practitioners would be the same whatever the method of remuneration, it seems probable that there would be no objection on the part of the Insurance Committee to adopt the method preferred by the Local Medical Committee. The profession in each area would have the choice of five methods of payment—namely, a pure capitation system, a pure payment per attendance system, and three composite systems (see Schedule I. to Regulations, Part 2). It is interesting to note that though the maximum amount of money to be distributed among the panel in any area will be the same whatever the method of distribution, the effect of the Regulations is that no part of it can be held in reserve, and that the full amount of the net fund must be divided among the practitioners at the end of each year (R. 30).

Amount of Remuneration.

(5) "*Medical remuneration to be what the profession considers adequate, having due regard to the duties to be performed and other conditions of service.*

"*After careful consideration the Representative Meeting resolved that the policy of the Association be to claim 8s. 6d. as a minimum capitation fee, not including extras and medicine, for members of Approved Societies, and to claim the recognition of payment per attendance, in which case the fees must be on such a basis as shall be deemed an equivalent by the State Sickness Insurance Committee with recognition of a £2 maximum income limit.*

69. The statement[3] of the Chancellor of the Exchequer on Oct. 23rd, 1912, indicates the terms which are now offered for medical attendance and treatment. These are a total provision for the normal service of 8*s.* 6*d.* per insured person, out of which 1*s.* 6*d.* is definitely allotted for drugs and appliances and 6*s.* 6*d.* for medical treatment alone, the remaining 6*d.* being available for drugs when the 1*s.* 6*d.* proves insufficient, otherwise being available for medical attendance. To this is to be added another 6*d.* per head in respect of the treatment of tuberculous insured persons by general practitioners. Upon this point the Chancellor on Oct. 23rd stated as follows: The doctor will get 7*s.* for payment for ordinary service, extras, and tuberculosis. The Chancellor made it perfectly clear that mileage was to be paid out of this sum. It must be pointed out, however, that the Regulations provisionally issued require considerable alteration in the light of this statement, and the Council is at a disadvantage in not having before it the exact terms of the alterations.

70. The *verba ipsissima* of the Chancellor's statement show the greatly increased service that will be required from medical men in return for the increased remuneration offered.

71. In those cases where, owing to special difficulties of access to a chemist, medicines and appliances are supplied by medical practitioners, the total amount of payment for attendance (ordinary medical attendance and non-institutional tuberculosis attendance), medicines, and appliances would be 9*s.* per head.

72. An "abnormal drug fund" is to be placed at the disposal of the Commissioners from which grants may be made to any district in which, owing to an epidemic, there has been an abnormal demand for drugs. It is not clear from the Chancellor's statement whether this fund is to be applied solely for the provision of extra drugs in these districts, or whether it could be used by the chemists instead of the 6*d.* per head which is held in suspense in every district and which in a time of epidemic might justly be claimed by the doctors on account of extra work.

73. The State Sickness Insurance Committee, in the document placed before the Commissioners which has been previously referred to, urged that the Insurance Fund and not the individual insured persons should be responsible for the payment of medical practitioners for such extras as form part of medical benefit, and the Committee also laid down a list of services which should be regarded as such extras. These, with the

[3] THE LANCET, Oct. 26th, p. 1187.

exception of vaccination, tooth extractions, and various forms and certificates (which are not mentioned in the Regulations) are listed as extras in the payment per attendance schemes. In the pure capitation method (First Schedule I., Part (II.) (A.)) obviously no extras are provided, all services covered by the term "medical attendance and treatment" being included in the capitation rate. The definition of medical treatment contained in the First Schedule, Part I. (1) is "such treatment as is of a kind which can consistently with the best interests of the patient be properly undertaken by a practitioner of ordinary professional competence and skill." It is further laid down in the First Schedule, Part I. (2): "Where the condition of the patient is such as to require services beyond the competence of an ordinary practitioner the practitioner shall advise the patient as to the steps which should be taken in order to obtain such treatment as his condition may require."

74. There will be no payment from the Insurance Fund for extras beyond the amount allotted for medical benefit, though major operations and specialist services are excluded from medical benefit according to the Chancellor's statement.

75. Regulation 28 defines the way in which the total amount available for the cost of medical benefit will be distributed, and as it provided for the deduction of drugs, appliances, and mileage from the fixed total amount available it was palpably unfair, as it places the practitioner in the invidious position of having to choose between ordering less drugs and appliances and lessening the amount of his own remuneration. The statement of the Chancellor, referred to in paragraph 70, while removing this grievance, renders it difficult to criticise the remaining provisions of this Regulation until it is seen in its amended form. Supposing the present arrangement to stand as regards mileage and cost of medical benefit of those persons residing temporarily outside the insurance area, it may be said that the latter item is mainly a matter of bookkeeping, for it is probable that, generally speaking, any amount deducted for this purpose from the local fund in any area would, over a period of years, be balanced by the amounts paid by other Committees in respect of persons temporarily residing out of their areas. A deduction in respect of mileage, if taken from the amount available in each separate area, might obviously be unfair. Rural practitioners in a mixed urban and rural district would absorb much of the fund in mileage, at the expense of the urban practitioner, while in a very scattered district mileage might absorb nearly the whole of the fund.

The payments for mileage should undoubtedly come from some centralised fund, and further information is needed on this point.

76. The State Sickness Insurance Committee represented to the Commissioners that deposit contributors should preferably be attended upon a payment per attendance basis, and stated that where a capitation system was preferred, a higher payment would be required for attendance upon this class of insured persons. No discrimination is made in the Regulations as to the *method* of remuneration for attendance upon deposit contributors, but in R. 7 (e) it is laid down that, in the arrangements which must be submitted to the Insurance Committee for the approval of the Commissioners, a special statement should be made as to the *amount* which, in the opinion of the Committee is properly payable in respect of each deposit contributor for the purpose of the cost of medical benefit.

77. In the document presented to the Commissioners it was urged that provision should be made in the Regulations to prevent those insured persons who are allowed to make their own arrangements being allowed to do so at lower rates of payment to the medical practitioners concerned than those paid to medical practitioners on the panel. There is no definite provision of this kind in the Regulations. It is provided in R. 15 that in the case of a person who has contracted to obtain treatment outside the panel for the year there shall be paid to him "by way of contribution to the cost of his treatment" a sum "equal to the amount contracted to be paid by him for that treatment, or, where that amount exceeds the sum available in respect of his medical benefit for the year, the amount so available." The natural tendency would be for outside contract arrangements to demand the whole of the amount available, but it is by no means clear that this amount would necessarily reach the hands of the doctor. As regards the approved institutions, a safeguard is provided which does not apply to any ordinary contract arrangement outside the Act, for in R.16 (2) (ii.) every institution must, as a condition of approval, from time to time furnish such accounts as the Commissioners or the Committee may require. This provision may be so administered as to meet the demand of the Association that the money paid over to the institutions shall in fact be expended in the provision of medical attendance. It is possible, however, to imagine a case in which the medical officer of an institution would receive less from a given number of patients than a panel practitioner would receive from the same number, the difference being expended in drugs, or in other ways which might be deemed to come within the definition of medical treatment. This difference in favour of the "panel" doctor, if it were allowed, would, however, tend to render service under these institutions even less attractive to members of the profession than it is now.

Medical Representation.

(6) "*Adequate medical representation among the Insurance Commissioners, in the Central Advisory Committee, and in the Insurance Committees, and statutory recognition of a Local Medical Committee representative of the profession in the district of each Insurance Committee.*"

78. Adequate representation among the Insurance Commissioners and in the Advisory Committees was granted during the passage of the Act. Representation on Local Insurance Committees has also been granted. At the same time, however, as this latter representation was granted the profession, increased representation was granted to insured persons, thus nullifying to some extent the advantage gained by the profession. The Association has always contended that the amount of representation of the profession on the Committees is inadequate, and the last demand that was made on this point was that the representation of the profession should be increased at any rate to one-tenth of the committees of all sizes. The Regulations give no increased representation to the profession. The proportion of practitioners in smaller committees is, by the terms of the Act, one-tenth, but for larger committees the obtaining of this proportion depends upon the Commissioners appointing sufficient medical practitioners, in the exercise of the powers conferred by Sub-section 56 (2) (e) of the Act.

79. The following table shows the present representation of the profession on these Committees:—

—	Medical practitioners directly elected.	Appointed by the county or county borough council.	Appointed by the Commissioners.	Total.
Committee of 40 to 59 members	2	1	1 (at least)	4
Committee of 60 to 79 members	2	2	1 (at least)	5
Committee of 80 members	2	3	1 (at least)	6

80. Statutory recognition of a Local Medical Committee was obtained by the Association during the passage of the Bill through Parliament, and the Regulations define the status and duties of that Committee.

81. The following is a list of the duties and rights of the Local Medical Committee:—(i.) It must be consulted as to (a) conditions of service of practitioners (R. 6 (1)); (b) method and rate of remuneration (R. 6 (1)); (c) mileage (R. 6 (1)); (d) rules with regard to the administration of medical benefit (R. 8) (Model Rules have been published by the Commissioners); (e) the fixing, varying, or abolition of an income limit (R. 13 (2)); (f) revision of lists of drugs and appliances (R. 40). (ii.) It has a right of appeal to the Commissioners as to any arrangements submitted by the Insurance Committee for approval (Rs. 7 and 10). [*Note.*—It is doubtful whether the Local Medical Committee could appeal to the Commissioners as regards the income limit. The statement as to income limit is to be furnished "for the information of the Commissioners," but apparently not for their approval. The Local Medical Committee must, however, be consulted by the Committee as above mentioned, and the Commissioners must consider any representations made by it as to any arrangements "submitted" to them.] (iii.) It has the power to dispute the right of any insured person to receive medical benefit under the arrangements made by the Committee, on the ground of income limit (R. 13 (4)). (iv.) It appoints three members of theCommittee of Complaints (R. 48 (2) (ii.)). (v.) It has a right to be represented at any inquiry before the Committee of Complaints(R. 48 (5) (c)). (vi.) It has imposed upon it the duty of considering complaints made by one practitioner of the panel against any other practitioner on the panel involving any question of the efficiency of the medical service of insured persons, and may apply to the Commissioners to remove the name of the practitioner against whom complaints are made from the panel, or may take such other action as it may deem proper in the circumstances (R. 49). (vii.) It may make representations to the Commissioners as to the inclusion or continuance on the list of a chemist or other person whose presence it is deemed will be prejudicial to the efficiency of the service, and on receiving these representations the Commissioners must hold an inquiry (R. 52).

82. The above list of duties and powers shows that under the Regulations the profession is to be asked to undertake very important duties which bear close relation to its interests. Whether the Local Medical Committee is to be of any service in protecting the profession depends, however, upon the real meaning and force of the "consultation" between the Local Medical Committee and the Insurance Committee, and also upon the extent to which the appeal of the Local Medical Committee to the Commissioners is likely to have weight.

83. It is to be noted that no indication is given in the Regulations as to how a Local Medical Committee is to be constituted in order to become approved, or what arrangements are to be made for its election and re-election, or what is its term of office.

Dispensing.

(7) "*The Association is of opinion that dispensing as hitherto, should be done or arranged for by the medical practitioner for his own patients should he so desire, payment to be made according to the scale of prices fixed by the Insurance Committee in accordance with the terms of the Act.*"

84. The Act made it plain that the normal system of dispensing is to be by chemists, and there is nothing in the Regulations inconsistent with this. Arrangements will only be made with practitioners for the ordinary supply of drugs, in conditions where the Committee is satisfied that an insured person, by reason of distance or inadequacy of means of communication, will have difficulty in obtaining any necessary drugs or appliances from a chemist or other person on the list (R. 35 (2)). Practitioners who feel very strongly upon the question of retaining their right to dispense medicines under similar conditions to those now obtaining, could apparently only succeed in doing so by inducing insured persons to contract out of the panel system. In this case the insured person who is allowed to make his own arrangements could contract to obtain treatment (including medicines and appliances) and receive from the Insurance Committee a sum equal to the amount contracted to be paid by him for treatment, or where that amount exceeds the sum available in respect of his medical benefit for the year, the sum so available (R. 15).

(II.) How Far do the Regulations Provide for the Various other Points placed before the Commissioners by those Members of the Advisory Committee Nominated by the Association?

85. *Definition of Medical Benefit.*—The Committee stated its opinion that the term "medical benefit" should be held to mean "ordinary medical treatment and attendance." The following is the definition contained in paragraph 1 of Part I. of the First Schedule to the Regulations:—"Such treatment as is of a kind which can consistently with the best interests of the patient be properly undertaken by a practitioner of ordinary professional competence and skill." This definition taken in conjunction with the Chancellor's statement on Oct. 23rd shows that there will be no payment from the Insurance Fund for extras beyond the amount allotted for medical benefit, and that major operations and specialist services are excluded from medical benefit. (See paragraph 70.)

86. *Misconduct.*—The Committee suggested that a Regulation should be framed defining what is meant by the word "misconduct" occurring in Subsection 14 (4) of the Act. Such definition does not appear in the Regulations, and uncertainty still therefore exists as to what diseases are to render the person liable to be suspended from sickness or disablement benefit, though not from medical benefit.

87. *Dressings.*—The Committee suggested that the words "drugs, medicines, and appliances" occurring in Subsection 15 (5) be understood to include dressings. This suggestion has been carried out. The list of appliances given in the 2nd Schedule to the Regulations includes many of the usual dressings.

88. *Certificates and reports.*—The Committee suggested that any report or certificate required, otherwise than as may be necessary for placing an insured person on, or removing him from sickness or disablement benefit, be an extra. No mention is made in any part of the Regulations of any provision for certificates, but the statement made by the Chancellor indicates that the rate of payment offered includes the provision of the certificates mentioned above, as well as the usual certificate for retaining an insured person on the fund, together with such bookkeeping as is necessary for purposes of record.

89. *Mileage.*—The cost of this is to be included in the payment for medical benefit, according to the Chancellor's statement.

A further clause on mileage was consequently deleted.

91. *Injuries covered by Workmen's Compensation Act.*—The Committee suggested that all injuries and diseases covered by the Workmen's Compensation Act should be extras. Nothing is said in the Regulations on this point, and it would appear, therefore, that the treatment of accidents is left, under the definition of medical benefit, to the discretion of the practitioner, as is the case in connexion with most club appointments at present.

92. *Miscarriages and confinements: Abortions.*—The Committee suggested to the Commissioners that confinements, miscarriages, and abortions should not be included under the head of medical benefit. Confinements are specifically excluded by paragraph 1 of the First Schedule; that is to say, the practitioner under his agreement with the Insurance Committee is not required to give any attendance in respect of a confinement, nor would he, under a payment per attendance system, be entitled to charge for such attendance. Under a pure capitation system it is apparently intended that abortions, in the case of insured persons, shall be included in the ordinary attendance given by the panel, because in the mixed systems and in the pure payment per attendance system, these cases, in so far as not included under Maternity Benefit, are specified as extras.

93. *Term of agreement for arrangements for medical attendance.*—The Committee suggested that the Regulations should make provision that the original arrangements agreed upon between the Insurance Committee and the Local Medical Committee shall continue in operation for a period of two years from the date on which the administration of medical benefit comes into operation. The exact duration of the first agreement is not specified in the Regulations, but in R. 10 it is prescribed that any arrangements for medical attendance made by the Committee and approved by the Commissioners shall have effect for such period as may be specified in the approval.

94. The Council is of opinion that any arrangements entered into should not be for a longer period than three years, and that all such arrangements should terminate at the same time. The Representative Body may consider this a matter with respect to which representations should be made to the Insurance Commissioners.

95. *Time of exercise of choice of doctor.*—It was suggested that provision should be made for the exercise of free choice twice a year—namely, in June and December. The normal system adopted in the Regulations is yearly exercise of choice, but R. 27 prescribes an arrangement whereby by mutual consent individual changes may take place at any time.

96. *Restrictions on pharmacists.*—It was suggested that provision should be made in the Regulations for prohibiting pharmacists from advising or treating patients (except rendering first aid) or repeating a prescription unless endorsed by the prescriber. The Regulations enter into no details on these points beyond Section 2 of the Third Schedule, which states that medicines must be supplied on presentation of an order provided by the Committee and signed by a practitioner on the panel, but the Local Medical Committee is given the right to make representations to the Commissioners as to the inclusion in or continuance on the list of a chemist when his presence is considered to be prejudicial to the efficiency of the service (R. 52).

97. *Medical Inspectors.*—Certain suggestions were made by the Committee with regard to the qualifications of any medical inspectors who might be appointed under the Act, and in order to protect the right of the regular medical attendant to be present at examinations carried out by such inspectors. The Regulations make no mention of such officers.

98. *Local Medical Committee to be consulted as regards sanatorium benefit.*—The Committee suggested that the Regulations should provide that the Local Medical Committee should be consulted on all general questions affecting the administration f Sanatorium Benefit. No mention is made of this subject in the Regulations which deal exclusively with medical benefit, but it is to be noted that in the circular of the Commissioners dealing with Sanatorium Benefit sent to Insurance Committees, and dated July 26th, 1912, these Committees are recommended to consult Local Medical Committees on these questions, where such Committees exist.

99. *Compensation for injury to practice.*—The Committee brought before the Commissioners the question of compensation in cases where it was possible to prove loss of goodwill in connexion with practices, as a consequence of the operation of the Act, but no mention is made of this question in the Regulations.

100. *Outline scheme of local arrangements for medical attendance.*—The Council submits for the convenience of Members in studying the question a brief outline of the arrangements proposed under the Regulations to be made in each locality for the administration of medical benefit. (*See* Appendix C.)

The discussion of the Council was being continued when we went to press.—ED. L.

ASYLUM REPORTS.

Kent County Asylum at Barming Heath (*Annual Report for the Year 1911*).—The average daily number resident at this asylum during the year 1911 was 1607. 323 patients were admitted, this being the smallest number admitted in any year since 1890. 58 per cent. of those admitted had been ill for more than a month before admission; 44·2 per cent. of the admissions were considered to be suffering from curable forms of insanity, and states of depression were twice as frequent as states of exaltation. 26·6 per cent. of the direct admissions were recurrent cases. In 44·5 per cent. of those admitted hereditary defect was ascertained. The rate of recovery was 43·9 per cent. on the total number of admissions, and was the highest recorded since 1892. 61·9 per cent. of the recoveries took place within a year from the commencement of the attack. In 56·3 per cent. the form of disease from which recovery resulted was recent melancholia or recent mania. The death-rate was 7·7 on the average daily number on the registers and was the lowest on record. Post-mortem examinations were held in 92 per cent. of the deaths. A great feature in the history of the asylum for the year has been the improvement of the conditions under which the staff live. Excellent mess-rooms and recreation-rooms have been provided, and the nurses and attendants are now able to enjoy a well-cooked and varied dietary served to them by waitresses at small separate tables in the mess-rooms. The club-rooms are supplied with newspapers, books, and games, and associated entertainments are organised from time to time for their amusement. Dr. H. Wolseley-Lewis, the medical superintendent, is very strongly of opinion that every effort should be made to raise the standard of the asylum nurse. Anyone who has studied the history of the progress made in the treatment of the insane during the last century knows that it has primarily depended on the improvement in the class of persons engaged in attending on them. The profession of nurse or attendant is full of interest to the intelligent worker, and while it requires rare qualities of heart and head and entails not a little self-sacrifice, it provides regular employment, fair remuneration, and pensions in cases of sickness or old age.

Down District Asylum, Downpatrick (*Annual Report for the Year 1911*).—The average number resident was 756. The cases admitted numbered 138. Mr. M. J. Nolan, resident medical superintendent, in discussing the causation of insanity, pointed out that the truth of the old adage "Prevention is better than cure" applies more fully and forcibly to insanity than to any other form of disease. Prevention is largely in the hands of the State, but it is more immediately in the hands of individuals—for there can be no question but that the more practical application of Christian teaching would combat much of the stress that leads to insanity. The State doubtless may do much by philanthropic legislation to minimise the more distressful conditions of life, but even the most benevolent legislation may be rendered useless in individual cases where failure of the exercise of true Christian principles perverts the would-be blessing into a curse. Take old age pensions, designed to save senility from the stress of want. Some septuagenarians, in order to qualify for this relief, divest themselves, as they believe, nominally of their little all, passing it on to others, who, once in possession of it, claim ownership and its rights. So personal cupidity brings about the very condition which the altruism of the State sought to prevent. Mr. Nolan further remarks that there is some fear that in very early cases of tubercle in those of neurotic temperament the concentration of the mind, incidental to specific treatment in sanatoriums, on the nature of the disease, will increase the number of those who will develop mental symptoms. The discharges number 70, the recovery rate being 44·2 on the admissions. The total number of deaths was 80, a percentage of 10·6 on the daily average number resident. Post-mortem examinations were made in 20 cases. It is a matter of congratulation to the committee of management that notwithstanding the fact that the institution is yearly improving in all directions calculated to increase its efficiency, there is, nevertheless, a steady reduction per head of expenditure for maintenance.

Medical News.

UNIVERSITY OF CAMBRIDGE.—The following degrees have been conferred :—

M.D.—G. Graham and A. B. Howitt.
M.C.—F. J. Cleminson.
M.B.—H. Bowring, A. C. Gemmell, C. B. Wainwright, and L. N. Weeks.
B.C.—H. Bowring, J. Ellison, A. C. Gemmell, and C. E. Redman.

ROYAL COLLEGE OF SURGEONS, EDINBURGH.—The following candidates, having passed the requisite examination, have been admitted Fellows of the College :—

G. W. Bury, R. G. M. Clements, J. G. Cormack, A. Fells, H. W. Gabe, N. J. Gerrard, A. C. Hendrick, C. Hudson, J. W. Illius, H. Kahlenberg, V. Lloyd Evans, R. B. Macfie, A. McMurray, L. Myer, C. T. H. Newton, G. F. Porter, W. Ross, W. E. Scott Moncrieff, A. A. Straton, L. W. O. Taylor, and W. S. Thacker.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the executive committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on Oct. 18th. The accounts presented showed that there was a diminution in the number of claims for the month of September, and although the amount paid away was heavy it was under the expectation. The funds of the Society now amount to over £250,000, and that large funds are required is evidenced by the fact that over £15,000 was paid in sickness benefit last year. This sum is likely to be exceeded during the current year. The bonuses being paid to members who attain to the age of 65, and to the representatives of those who die before that age, amounted to £1200 for the period under review. A prospectus and all further information may be obtained from Mr. Bertram Sutton, secretary, Medical Sickness and Accident Society, 33, Chancery-lane, London, W.C.

ROYAL MEDICAL BENEVOLENT FUND.—At the October meeting 19 cases were considered and grants amounting to £181 made to the applicants. Appended is an abstract of the cases relieved :—

Widow, aged 53, of M.D. Glasg. Practically unprovided for at husband's death, and children only able to give slight occasional help. Takes boarders but finds great difficulty in making ends meet. Relieved once, £10. Voted £5.—M.D. Edin., aged 69. Has practised for several years in a large provincial town but has been in bad health and at present is incapacitated. Voted £12.—Daughters, aged 51 and 49, of late M.R.C.S. After father's death helped to support an invalid mother by taking boarders and have since acted as companions. Income £15 a year each, and one is only just convalescent from a critical illness. Voted £10.—Daughter, aged 52, of late M.D. Lost her home a year ago through the death of a brother, and so far has been unable to obtain employment. Voted £10.—Daughter, aged 73, of late M.R.C.S. Has supported herself as a housekeeper for many years, but is now past work and has exhausted her small savings. Voted £6, and advised to apply for an old age pension.—Widow, aged 45, of M.B., C.M. Glasg. Husband's means were exhausted by a long expensive illness which preceded his death a year ago. Has taken a house in a large town and hopes to obtain boarders. One daughter, aged 15. Voted £10.—Widow, aged 45, of M.R.C.S. Practically unprovided for at husband's death a few years ago, and endeavours to support herself by letting lodgings. Three children, the eldest earning 10*s.* a week as a clerk, the others dependent. Relieved three times, £35. Voted £12.—Widow, aged 72, of M.D. St. And. No income, and family only able to give slight assistance. Relieved five times, £66. Voted £6 subject to application being made for an old age pension.—Widow, aged 69, of L.R.C.P. Edin. Income £12 a year and receives a little help from her children. Relieved once, £10. Voted £10.—Widow, aged 46, of M.D. Receives a home at a boarding house in return for her services but has never been able to obtain a paid post. Only child, a boy aged 14, is at Epsom College. Relieved 13 times, £146. Voted £5.—Widow, aged 33, of M.D. Lond. No income, and occupation practically impossible owing to feeble health and deafness. Three children, of whom two have been adopted by relations, the third being at school. Relieved once, £5. Voted £5.—Daughter, aged 40, of late F.R.C.S. No income, and regular occupation impossible on account of ill health. Receives 10*s.* a month from another society. Relieved six times, £72. Voted £12.—Daughter, aged 50, of late M.R.C.S. Supports herself by letting lodgings in the summer and keeping a small sweet shop in the winter, but has had a very bad season and consequently has no means to buy any stock. Relieved once, £10. Voted £10.—Daughter, aged 58, of late M.R.C.S. Had a small income but lost it through the speculations of a friend to whom it was entrusted for investment, and is now dependent on a relation who can ill afford to help. Relieved three times, £15. Voted £12.—Daughter, aged 63, of late M.R.C.S. No income ; is in very bad health and consequently dependent on this Fund and a small weekly allowance from a friend. Relieved eight times, £90. Voted £12.—Widow, aged 72, of M.R.C.S. Is a chronic invalid and dependent on an old age pension and slight irregular help from her children. Relieved seven times, £86. Voted £12.—Widow, aged 75, of L.R.C.P. Edin. Supplements an income of a few shillings a week by letting lodgings, but often has her rooms empty, and is in failing health. Relieved twice, £24. Voted £12.—Daughter, aged 53, of late M.R.C.S. Used to be a nurse, but is now unable to support herself owing to chronic glaucoma. Income £4 a year and receives slight help from friends. Voted £10.—Widow, aged 80, of late F.R.C.S. No children, and small income insufficient for expenses, which are quite unavoidable on account of ill health. Relieved three times, £30. Voted £10.

Contributions may be sent to the honorary treasurer, Dr. Samuel West, 15, Wimpole-street, London, W.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced :—Dr. Hans Strehl, titular professor and *privat-docent* of surgery in the University of Königsberg, aged 40. —Dr. Oswald Kohts, formerly extraordinary professor of children's diseases in the University of Strasburg, aged 68. He contributed a large number of articles to Gerhardt's "Handbook of Children's Diseases," as well as a good many papers to medical journals. For several years he had been living in retirement.—Dr. Ernst Heuss, *privat-docent* of dermatology and syphilidology in the University of Zürich, aged 48. —Dr. Ernst Tavel, extraordinary professor of surgery in the University of Bern and senior surgeon of the Insel Hospital.—Dr. J. Penner, sanitary councillor of Danzig.—Dr. Löbker, titular professor and medical privy councillor of Bochum, aged 58. His published works on the surgery of gall-stones, ankylostomiasis, and bone and joint operations are well known. He was the first director of the "Bergmannsheil" Hospital, which was established under the accident insurance law in 1889, and he there instituted and carried out a number of valuable plans of hospital management and organisation. He was for many years president of the German Medical Association, and his death is felt as a profound loss in all German medical circles.—Dr. Rudesindo Garcia Rijo, vice-president of the Cuban Medical College (murdered).—Dr. A. Gutsch, medical privy councillor, Carlsruhe.

LITERARY INTELLIGENCE.—Messrs. Baillière, Tindall and Cox announce for publication a second edition of the English translation of Dieulafoy's "Text-Book of Medicine." The whole work has been thoroughly revised, and much new material has been added. The fifteenth French edition of the "Manuel de Pathologie Interne" was first translated into English and published in 1910. The second English edition is bound in two volumes of 2080 pages, with 9 coloured plates and 99 other illustrations in the text. The same publishers also announce a translation from the German of Professor Schmieden's well-known "Course of Operative Surgery." It is translated and edited by Dr. Arthur Turnbull, demonstrator of anatomy in the University of Glasgow. It contains many illustrations, coloured and plain.—Messrs. Cassell and Company announce for publication the third edition of "A Handbook for Midwives and Maternity Nurses," by Dr. Comyns Berkeley. In addition to being carefully revised, two new appendices no Venereal Diseases and Cæsarean Section have been added.

DONATIONS AND BEQUESTS.—Under the will of the late Mr. William Jacks, of Clifton Down, Bristol, the sum of £400 has been left to the Bristol General Hospital, and a similar sum to the Bristol Royal Infirmary, while the Bristol Eye Hospital and Eye Dispensary receive £50 each. —The Chelsea Hospital for Women has received a donation of £52 10*s.* towards its rebuilding from the Fishmongers' Company.—The Royal Dental Hospital of London, Leicester-square, has received £52 10*s.* from the Corporation of the City of London and £50 from the executors of the late Mr. John Vicary.—The late Mr. Edward Wilkinson Jefferys left estate of the gross value of £32,713, of which £23,034 is net personalty. The ultimate residue of this estate he left to accumulate during one life, and then to the trustees of his will for distribution among such hospitals in the Administrative County of London as they shall determine.—Major Samuel Nicholson, of Hove, has by will bequeathed £5000 to the Royal Alexandra Hospital for Sick Children, Brighton.—Under the will of the late Miss Louisa Twining, the testatrix left £1000 to King's College Hospital for the "Twining" Ward ; £100 to St. John's Hospital, Twickenham ; and £500 each to the Metropolitan and National Association for Providing Trained Nurses for the Sick Poor, the Metropolitan Provident Medical Association, the Nursing Sisters of St. John the Divine, and the Kensington District Nursing Association.—The late Miss Mary Houldsworth has bequeathed £3000 to the Ayr County Hospital ; £5000 to the London Hospital ; £5000 to the Sick

Children's Hospital, Glasgow; and £5000 to the hospital in Glasgow to be founded for the relief of suffering on homœopathic principles.—Sir Ernest Hatch, the treasurer of University College Hospital, has received a contribution of 100 guineas from a visitor as a mark of appreciation of the care and attention accorded to the patients in the hospital.

A DEVONSHIRE CENTENARIAN.—Mrs. Louisa Bray, of Plymouth, died on Oct. 12th, a fortnight after having celebrated her 100th birthday.

FIRST ANNUAL DINNER OF THE BEIT MEMORIAL RESEARCH FELLOWS.—On Oct. 26th the first annual dinner of the Beit Memorial Fellows for Medical Research was held at the Trocadero Restaurant, London. A large number of Fellows were present, and the meeting proved a great success. Letters were received from Mr. Otto Beit and Sir James K. Fowler expressing regret at their unavoidable absence and conveying to the Fellows their best wishes for the success of the evening. It was unanimously resolved that telegrams should be sent to both these gentlemen conveying the greetings of the Fellows, and the hope that they would be present at the next dinner. It was also resolved that the dinner should become an annual event to which all past and present Fellows should be invited, and that it should always be held on the fourth Saturday in October in each year. Dr. F. W. Edridge-Green has undertaken to arrange the dinner for next year, in succession to Dr. E. Hindle, who was responsible for the arrangement of the first dinner.

ROYAL MICROSCOPICAL SOCIETY.—A conversazione was held at King's College, Strand, on Oct. 16th, the President and Mrs. H. G. Plimmer receiving the guests. The gathering was an unusually large one, and many of the exhibits were of exceptional interest. In the lecture theatre a fine cinematograph display of Pond-life was given by Mr. E. J. Spitta, and this was followed by an interesting and instructive lecture, entitled "Insects as Carriers of Disease," by Professor R. T. Hewlett, illustrated with lantern slides. Mr. Max Poser gave a novel demonstration of liquid crystals, which were shown on the screen both in the solid and liquid phases by means of a projection apparatus. Among the many exhibits in the large hall were an ultra-microscope photomicrographic apparatus by Mr. J. E. Barnard, and an Abbe diffraction microscope; quartz mercury vapour lamp by Mr. J. E. Barnard and Mr. Powell Swift. Photomicrographs and slides showing the interesting mitotic phenomena were exhibited by Mr. E. J Sheppard and Mr. H. F. Angus. The Edinger drawing and projection apparatus was shown by Mr. J. W. Ogilvy, with photographic apparatus, and photomicrographs by the "three-colour process." There were also shown some examples of "Brownian movement," by Dr. G. P. Bate; a complete optical bench, by Messrs. R. and J. Beck; diffraction experiments, by Mr. J. W. Gordon; slides and photographs of foraminifera, by Mr. E. Heron-Allen and Mr. Arthur Earland; mycetozoa, by Mr. C. H. Huish; trypanosomes, by Professor Minchin, F.R.S.; stereo-photomicrographs in colour of water-mites, by Mr. H. Taverner; chemical reactions, by Professor Herbert Jackson; micro-spectra camera, by Mr. Julius Rheinberg; interference figures in crystals, by Mr. Powell Swift; foraminifera, by Mr. Ernest Heath; an old microscope, by Professor Dendy, F.R.S.; photomicrographic apparatus and various slides, by Mr. Charles Lees Curties; metallurgical sections, by Mr. Max Poser; and saccharomycetes, by Mr. A. Chaston Chapman and Mr. R. L. Collett. Another interesting feature, arranged by Mr. D. J. Scourfield, was a splendid exhibition of pond life due to the combined efforts of the Fellows of the society and to various members of the Quekett Microscopical Society.

BOOKS, ETC., RECEIVED.

ALLEN, GEORGE, AND CO., LIMITED, 44 and 45, Rathbone-place, London, W.

The Elements of Child-Protection. By Sigmund Engel, Doctor of Laws and of Politics; Official Guardian and Advocate in Budapest. Translated from the German by Dr. Eden Paul. Price 15s. net.

The Student's Human Physiology. A First Year's Course in the Practice and Theory of the Subject. By Ernest Evans, Natural Science Master, Technical Institute, Burnley. Price 5s. net.

ARNOLD, EDWARD, London.

Hygiene for Teachers. By R. Alun Rowlands, B.Sc., M.R.C.S., L.R.C.P., Demonstrator of Physiology, and Assistant to the Lecturer on Cardiac Research at the London Hospital Medical College. With Prefatory Note by Leonard Hill, M.B., F.R.S., Professor of Physiology, University of London. Price 3s. 6d. net.

BAILLIÈRE, TINDALL, AND COX, London.

A Text-book of Medicine. By G. Dieulafoy, Professor of Clinical Medicine at the Faculté de Médecine de Paris; Physician to the Hôtel Dieu; Membre de l'Académie de Médecine. Second edition. Authorised Translation from the Sixteenth Edition of "Manuel de Pathologie Interne." By V. E. Collins, M.D. Lond., M.R.C.S., L.R.C.P., and J. A. Liebmann, Ph.D., M.A., LL.D. In two volumes. Seventeenth thousand. Price 25s. net.

CASSELL AND COMPANY, LIMITED, London, New York, Toronto, and Melbourne.

A System of Surgery. Edited by C. C. Choyce, B.Sc., M.D., F.R.C.S., Dean of, and Teacher of Operative Surgery in, the London School of Clinical Medicine (Post-Graduate); Surgeon to the Seamen's Hospital, Greenwich; Surgeon to Out-Patients at the Great Northern Central Hospital. Pathological Editor, J. Martin Beattie, M.A., M.D., C.M., Professor of Bacteriology in the University of Liverpool, and Bacteriologist to the City of Liverpool. In three volumes. Volume II. Price 21s. net.

British Red Cross Society Nursing Manual, No. 2. By James Cantlie, M.A., M.B., F.R.C.S., V.D., Honorary Surgeon-Colonel, R.A.M.C. (T.F.). Price 1s. net.

CONSTABLE AND COMPANY, LIMITED, 10, Orange-street, Leicester-square, London, W.C.

Cancer of the Breast, Clinically Considered. By the late Cecil H. Leaf, M.A., M.B. Cantab., F.R.C.S. Eng., Surgeon to the Cancer Hospital, and to the Gordon Hospital for Diseases of the Rectum. Price 10s. 6d. net.

DAVIS (F. A.) COMPANY, Philadelphia, U.S.A. PHILLIPS, STANLEY, 23, Creighton-road, Queen's Park, London, N.W.

Health and Medical Inspection of School Children. By Walter S. Cornell, M.D., Director of Medical Inspection of Public Schools, Philadelphia; Lecturer on Child Hygiene, University of Pennsylvania. Price 12s. 6d. net.

GRIFFITHS, FRANCIS, 34, Maiden-lane, Strand, London, W.C.

Can a Drunkard be Cured? By E. Brown, M.R.C.S. Eng., L.R.C.P. Lond. Price 2s. 6d. net.

GURNEY AND JACKSON, 33, Paternoster-row, London, E.C.

Elementary Chemical Theory and Calculations. By Joseph Knox, D.Sc., Lecturer on Inorganic Chemistry, University of Aberdeen, Author of "Physico-Chemical Calculations." Price 2s. net.

HEINEMANN, WILLIAM, 21, Bedford-street, London, W.C.

Woman and Womanhood. A Search for Principles. By C. W. Saleeby, M.D., F.R.S.E., Ch.B., F.Z.S. Price 10s. net.

HEWITT, WILLIAM G., Brooklyn, N.Y.

St. Luke's Hospital Medical and Surgical Reports. Volume III. 1911. Price not stated.

JAMES AND SONS, Thakurdwar, Bombay, India.

Physiology of the Central Nervous System and Special Senses. For the Use of Students. By N. J. Vazifdar, L.M. & S., Tutor in Chemistry, the Grant Medical College, Bombay. Second edition. Revised and enlarged. Price Rs.3., or 4s. (Can be had from Mr. Ramchandra Govind, Bookseller, Kalbadevi, Bombay.)

JOURNAL OF NERVOUS AND MENTAL DISEASE PUBLISHING COMPANY, 64, West 56th-street, New York.

Nervous and Mental Disease Monograph, Series No. 4. Selected Papers on Hysteria and Other Psychoneuroses. By Prof. Sigmund Freud, Vienna. (Second enlarged edition.) Authorised Translation by A. A. Brill, M.D., Ph.B., Chief of Nervous Department, Bronx Hospital and Dispensary; Clinical Assistant, Department of Neurology and Psychiatry, Columbia University. Price $2.50.

LIPPINCOTT, J. B., Company, Philadelphia and London.

Mouth Hygiene and Mouth Sepsis. By John Sayre Marshall, M.D., Sc.D., Syracuse University, Captain U.S. Army (retired), Formerly Examining and Supervising Dental Surgeon, U.S. Army; President of the Board of Examiners. Price 6s. net.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Select Committee on Patent Medicines.

ONE of the witnesses who gave evidence on Thursday, Oct. 25th, before the Select Committee of the House of Commons which has been appointed to investigate the subject of patent medicines, was Dr. A. R. CUSHNY, professor of pharmacology at University College. He spoke on behalf of the Therapeutical Section of the Royal Society of Medicine. Sir HENRY NORMAN was in the chair.

Dr. CUSHNY said that one of the chief points which he wished to bring before the Committee was that some of the preparations sold as patent medicines were directly injurious to the user. Various preparations which had been banned in the United Sates as poisonous were permitted to be sold here. There was another category of proprietary remedies which were quite useless, but owing to people taking them when they ought to be under proper medical treatment they indirectly led to harm. There was a third group. Such preparations were not in themselves objectionable, but often exaggerated virtues

were claimed for them which they did not possess. They were in no way superior to preparations in the British Pharmacopœia, but they secured a wide sale owing to advertisements. He admitted that he would like to see certain preparations popularised which were in the Pharmacopœia. He would like to see public opinion educated in regard to these matters. He further was in favour of having the ingredients of patent medicines stated on the package and of having some control or censorship over advertisements.

Mr. O'GRADY asked whether the statements of the ingredients in Latin on the label would convey any meaning to a working-class purchaser.

Dr. CUSHNY replied that on *a priori* grounds it might seem that such a statement was of little use to such a purchaser, but, nevertheless, in the United States experience had shown that it was most useful.

The committee adjourned.

Mental Deficiency Bill.

Clause 2 of the Mental Deficiency Bill, enlarged so as to include the establishment of the Board of Control proposed by the Home Secretary, has been agreed to by a Grand Committee of the House of Commons. The paid members of that Board are to receive salaries amounting to not more than £1500 a year each. The existing Lunacy Commissioners are to be transferred to the new Board of Control on precisely the same tenure as that which they at present enjoy. It is understood that the committee will now proceed to deal with the clause laying down the conditions under which persons are to be classified as mentally deficient.

HOUSE OF COMMONS.

WEDNESDAY, OCT. 23RD.

Provision of Medical Treatment under the Insurance Act.

Mr. WORTHINGTON-EVANS asked the Secretary to the Treasury how many schemes of arrangement to provide medical treatment under the National Insurance Act had been submitted by Insurance Committees to the Insurance Commissioners under Section 3 of the National Health Insurance (Administration of Medical Benefit) Regulations, 1912; and which schemes (if any) had been approved by them.—Mr. MASTERMAN answered: Pending the statement as to medical benefit just made by the Chancellor of the Exchequer, no schemes of arrangement for providing medical treatment have been submitted by the Insurance Committees to the Commissioners. The second question does not therefore arise.

Medical Benefit in Germany.

Mr. WORTHINGTON-EVANS asked the Secretary to the Treasury when the promised paper dealing with the cost of medical benefit in Germany, and the scope and nature of the medical attendance and treatment there, giving copies of the agreements made by the German doctors, and showing the fees payable to them, would be published.—Mr. MASTERMAN replied: An officer of the Commissioners has visited Germany to make the necessary investigations, and his report is now in preparation.

Sanatoria Benefits in the Isle of Wight.

Mr. DOUGLAS HALL asked the Secretary to the Treasury whether any provision had yet been made in the Isle of Wight for the sanatoria benefits under the National Insurance Act.—Mr. MASTERMAN wrote in reply: I am informed by the Isle of Wight Insurance Committee that they have made arrangements with two sanatoria, and are in negotiation with a third.

Sanatoria in Lincolnshire.

Mr. WEIGALL asked the President of the Local Government Board how many approved sanatoria there were in Lincolnshire and where they were situated.—Mr. BURNS wrote in reply: I have approved temporarily of the use of beds at the Lincoln City Hospital for the treatment of cases of tuberculosis, and arrangements have been made for a temporary phthisis clinic at the office of the medical officer of health of the city. A suggestion is under consideration that the county and county borough councils in Lincolnshire should combine with a view to the provision of one sanatorium for the whole geographical county, but no permanent sanatorium has yet been provided.

Dublin Practitioners and Friendly Societies.

Mr. DEVLIN asked the Chief Secretary to the Lord Lieutenant of Ireland whether his attention had been called to a meeting of Dublin medical practitioners held under the presidency of the President of the Royal College of Surgeons, at which resolutions were adopted to the effect that every doctor practising in Dublin should be requested to sign a pledge not to accept service with any insurance or benefit society or any medical appointment unless the Local Medical Committee were satisfied that the payment was an adequate remuneration, and that every city doctor who was a medical officer to any benefit society of whatever kind be required to make a demand on his society for such rate of remuneration as the Local Medical Committee should consider proper, and, if such be not granted, he must resign his office and no practitioner should be allowed to take it, and that a black list be formed on which the names of practitioners who refused to sign the pledge should be placed, such list being published in the Medical Colleges, and it to be understood that everyone who appeared thereon should be boycotted by means known to the medical profession; whether, seeing that this resolution was an infringement of the law as advocating intimidation, he would order a prosecution where it could be shown that in consequence of pressure brought to bear on medical practitioners by the Local Medical Committee appointed at the meeting referred to, such doctors who had undertaken work for Friendly Societies or Insurance Committees resigned their appointments; whether he would consult the Irish Law Officer as to whether licensing corporations in Ireland had power to remove from their registers the names of medical practitioners who refused to recognise the authority assumed by the Dublin Medical Committee; and, if not, would he take steps to protect medical practitioners who were prepared to work for Friendly Societies or to undertake the administration of the National Insurance Act in Ireland.—Mr. BIRRELL furnished the following written answer: The resolutions actually passed at the meeting referred to are not quite accurately set out in the question. I am advised that the resolutions and pledge are not in themselves illegal, and that the licensing corporations in Dublin are not in any way controlled by either the resolutions or the pledge. The Government are not aware that any doctor has been removed from any register for refusing to recognise the views of the Dublin Medical Committee. If there should be anything which amounts to an infringement of the law the question of what action should be taken will be considered.

THURSDAY, OCT. 24TH.

Sanatoria in Ireland.

Sir JOHN LONSDALE asked the Chief Secretary to the Lord Lieutenant of Ireland whether the Local Government Board had advised any county councils in Ireland to make arrangements with the Women's National Health Association for the provision of sanatoria; whether the Board had formed any opinion as to the advisability of county councils undertaking themselves the work of initiation and management of the sanatorium grants, and whether that opinion would be communicated to the county councils; and whether he would guarantee that counties working independently of the association would not suffer as regards their share of the total grant in comparison with the counties who had decided to hand over their statutory responsibilities to an irresponsible association.—Mr. BIRRELL replied: The Local Government Board have advised all county councils to make immediate arrangements for the treatment of consumptives belonging to their respective counties, and they have not interfered in any way with the discretion vested in county councils of providing sanatoriums for the inhabitants of their counties either by establishing such institutions themselves or by entering into agreements with persons having the management of such institutions. The same principles of distribution will be observed whether a county council acts in concert with, or independently of, the Women's National Health Association.

Sir JOHN LONSDALE: Is it within the knowledge of the right honourable gentleman that the Local Government Board have advised any council councils in Ireland to make arrangements with the Women's Health Association?—Mr. BIRRELL: No, I do not think that the Board has given any such advice.

Sir JOHN LONSDALE further asked the right honourable gentleman whether the Irish Local Government Board had satisfied themselves as to who was legally liable for the maintenance and upkeep of the sanatorium buildings provided by the Women's National Health Association in the event of the weekly contributions on behalf of patients proving insufficient for the purpose: what was the amount expended upon Peamount and Rosslare up to the present time, and what would be the actual cost per bed; had the Women's National Health Association offered to provide beds at a fixed price; and, in the event of this quoted price being less than the actual cost, upon what fund would any deficiency fall.—Mr. BIRRELL answered: Responsibility for maintenance and upkeep devolves upon the Women's National Health Association as occupants of premises held on trust for general sanatoria purposes. The estimated amount of expenditure out of the sanatorium grant on Peamount is £17,945 according to particulars furnished to the Local Government Board by the architects and the Women's National Health Association. The expenditure at Rosslare is estimated to come to less than £1700. Pending the completion of the institutions and until an account has been taken between expenditure in respect of temporary provision and expenditure which permanently supplies contracting counties with beds, the exact cost per bed taken permanently cannot at the present time be finally ascertained with complete accuracy. The Women's National Health Association has named a figure as the estimated cost per bed, and in all probability such figure may prove to be accurate, but however this may prove to be, the final charge against each county must be determined in the manner indicated in a reply which I recently gave to a question in this House.

Mr. T. M. HEALY: Will the right honourable gentleman lay down as a fair proposition that each county will be entitled, if it requires it, to an equal share of the Imperial grant?—Mr. BIRRELL: Any county which contracts with any association, whether the association referred to in the question or any other, will have charged against its share of the total grant the actual cost supplied out of the £25,000.

Mr. T. M. HEALY: Will the right honourable gentleman say that the counties which do not align themselves with this Dublin body will be entitled to the payment of an equal share?—Mr. BIRRELL: I think that is quite so.

Mr. MOORE: Is a small county with a small population to receive the same amount as a large county?—Mr. BIRRELL: No, it is on a population basis.

Sir JOHN LONSDALE: Who is responsible for any deficiency which may occurr in the working of the Peamount institution in connexion with the Women's Health Association?—Mr. BIRRELL: That is a question for the Women's Health Association. That association has been allowed up to an amount of £25,000 to provide beds, some on a permanent and some on a temporary basis. As soon as the money has been spent the maintenance and upkeep devolves upon the Women's Health Association.

Sir JOHN LONSDALE: In the event of its not being successful, is the place to be closed and the £25,000 to be wasted?—Mr. BIRRELL: No, the Peamount Institution is not the property of the Women's Health Association. It is vested in trustees.

Mr. MOORE: For whom?—Mr. BIRRELL: For the purposes of general sanatoria.

Mr. MOORE: For whom?—Mr. BIRRELL: For the country at large.

Mr. MOORE: For the Government?—Mr. BIRRELL: No.

Mr. SWIFT MACNEILL: Is it the fact that not one single farthing has been given to this society out of public funds, which has not been authorised and approved by the Local Government Board?—Mr. BIRRELL: Of course, the money has been doled out to the association on certificates of expenditure verified and examined by the Local Government Board.

Medical Inspectors and Sanatoria Administration in Ireland.

Mr. MOONEY asked the Chief Secretary to the Lord Lieutenant of Ireland what practical knowledge and experience the medical inspectors of the Local Government Board of Ireland possessed regarding the erection, equipping, and administration of sanatoria and tuberculosis dispensaries; in what recognised sanatoria and tuberculosis dispensaries in Great Britain or on the Continent did they acquire their experience; whether, in view of the fact that the Local Government Board required

a six months' special course for medical superintendents of sanatoria and tuberculosis medical officers, he could state whether the medical inspectors of the Local Government Board had had a similar training; and, if not, whether the Local Government Board would afford their medical inspectors an early opportunity of obtaining such training.—Mr. BIRRELL said in reply: The medical inspectors of the Local Government Board have been closely associated with the erection and administration of sanatoria established by public bodies in Ireland, such as Heatherside Sanatorium in County Cork, Crooksling Sanatorium, County Dublin, and the Abbey Sanatorium, near Belfast. They have by personal inspection become familiar with the construction, arrangements, and methods of management in other sanatoria and tuberculosis dispensaries in Ireland as well as in similar institutions in England and Scotland. There is no necessity for the medical inspectors to undergo the special course of instruction referred to by the honourable gentleman, seeing that they are not in the discharge of their duties called upon to engage in the diagnosis and treatment of tuberculosis.

Mr. MOONEY: Why do the Local Government Board require more efficiency in the superintendents than in their own inspectors?—Mr. BIRRELL: It depends upon the nature of the duty. It is one thing to consider the construction and arrangement of a sanatorium and another thing to deal with this disease.

Mr. MOONEY: Was this regulation made by the right honourable gentleman himself or by the vice-president of the department?—Mr. BIRRELL: It was made by my consent. It was submitted to me and I believe bears some traces of my pen upon it.

Ireland and the Increased Medical Grant.

Mr. J. REDMOND asked the Chancellor of the Exchequer whether in view of the additional grant which it was proposed to make in respect of medical benefit under the Insurance Act he would consider the question of devoting a sum of money towards making good the cost of certificates for sickness and invalidity benefits in Ireland, and whether he was still of the view that the extension of medical benefit to Ireland was a matter to be decided by the wishes of the Irish people themselves.—Mr. LLOYD GEORGE answered: This suggestion was put before me some time ago by my honourable and learned friend. I am taking the opinion of the Irish Insurance Commissioners upon it and hope soon to be able to make an announcement. As regards the latter part of the question, I have always made it clear that the question of extending medical benefit to Ireland is a matter entirely to be determined by the Irish people themselves.

The Board of Superintendence of the Dublin Hospitals.

Mr. GINNELL asked the Chief Secretary to the Lord Lieutenant of Ireland to state the names of the present members of the Board of Superintendence of the Dublin Hospitals, and why their last report had been issued without date or signature.—Mr. BIRRELL furnished the following written reply: The names of the present members of the Board of Superintendence of the Dublin Hospitals are: Lord Ardilaun, Dr. J. Magee Finny, Sir John Barry, Mr. James Inglis, J.P., Dr. Joseph O'Carroll, Mr. Ambrose Kelly, Sir L. H. Ormsby, M.D., Mr. W. F. Cotton, M.P., Mr. C. E. Lampkin, Miss A. M. M'Donnell, Sir John Lentaigne, F.R.C.S.I., and Miss Margaret MacNeill. The original report was dated and signed by all the members of the Board, but I understand that by an oversight the date of the report and the names of the members of the board were omitted from the report when being sent to the printer.

The Treatment of Sleeping Sickness.

Mr. NEWDEGATE asked the Secretary of State for the Colonies whether he was aware that Dr. F. Mehnarto (Dr. Med. Heidelberg, Dr. Phil. Berlin) had recently infected and then cured animals of sleeping sickness by the injection of a serum; that these experiments, hitherto unknown to science, were conducted under the personal supervision of Dr. Jolly, Professor of Physiology, of the South African College, Cape Town; whether he was aware that Dr. Mehnarto also performed the same experiment on himself with successful results, as can be testified to by Dr. de Rudere, of the Congo Territory; and whether, in view of the fact that a Commission was in existence at present to try and find a remedy for sleeping sickness which was costing the British Government a considerable sum of money annually, he would take steps to see that advantage was taken of the discoveries of Dr. Mehnarto in those colonies where sleeping sickness prevailed.—Mr. L. HARCOURT wrote in reply: The Director of the Tropical Diseases Bureau informs me that he has seen some papers briefly describing experiments performed by Dr. F. Mehnarto on rabbits for the cure of sleeping sickness, but that it was not possible for him to form an estimate of their value. It was stated in the papers that some of the experiments had been performed in Dr. Jolly's laboratory at Cape Town. There was no mention of Dr. Mehnarto having performed similar experiments on himself. Before I can take steps to see that advantage is taken of the discoveries of Dr. Mehnarto it is needful to ascertain whether these discoveries are of value, and I suggest that Dr. Mehnarto should bring his work before some scientific society or offer it to some scientific journal for publication. If it has the value which he appears to claim for it there will be no difficulty in having it published and discussed by competent critics. When this has been done I shall be glad to consider the matter further.

Experiments on Living Animals.

Mr. LANSBURY asked the Secretary of State for the Home Department whether the formation of his new advisory body to assist him in the work of granting licences and certificates for experiments on living animals, as recommended by the Commissioners in their report of last March, was now completed; and, if so, whether the names of the gentlemen composing that advisory body can be made public.—Mr. MCKENNA (in a written answer) replied: I have not yet been able to complete the arrangements, but I hope that this matter may be settled before long.

The Instruction of Defective and Epileptic Children.

Mr. ACLAND ALLEN asked the President of the Board of Education whether, in view of the fact that, under the permissive provisions of the Elementary Education (Defective and Epileptic Children) Act, 1899, only 51 out of 318 local education authorities in England and Wales had established schools or classes for mentally defective children, and only some 12,000 children were attending such classes out of 48,000 estimated by the chief medical officer of the Board of Education to require such accommodation, he proposed to introduce a measure to make the adoption of the Elementary Education (Defective and Epileptic Children) Act, 1899, compulsory on all local education authorities.—Mr. J. PEASE wrote in reply: The Government are considering the matter.

MONDAY, OCT. 28TH.

The Insurance Act and the Cost of Drugs.

Mr. WORTHINGTON-EVANS asked the Secretary to the Treasury whether it was intended to repeal the Regulations, dated Oct. 1st, 1912, now in force as to the administration of medical benefit under Clause 28, of which the cost of drugs and appliances was made a first charge on the amount available for medical treatment.—Mr. MASTERMAN said in reply: The modifications in the Regulations are being drafted to carry out the changes rendered necessary by the announcement of the Chancellor of the Exchequer.

Mr. WORTHINGTON-EVANS asked the right honourable gentleman to state out of what funds drugs and appliances to be provided in connexion with medical benefit under the National Insurance Act were to be paid for if their average cost in England equalled the average cost in Germany, say 3*s.*, and thus exceeded the 1*s.* 6*d.*, or possibly 2*s.*, per person allowed for in the scheme recently announced by the Chancellor of the Exchequer.—Mr. MASTERMAN answered: The conditions attaching to the sale of drugs, the articles required to be supplied, the persons able to claim them as part of benefit, in Germany differ so widely from the conditions in this country, that it is impossible to institute any useful comparison between the two. If the total cost of drugs in any district exceeded the total money available during the period of the contract with the Insurance Committee (including the sum provided by the 6*d.* for each insured person which is divisible between the doctors and chemists if the total cost is between 1*s.* 6*d.* and 2*s.*), the bills would be discounted on some agreed system, but all the evidence in this country shows that, except in cases of abnormal sickness (which are to be met by a special figure), the cost is far below the sum available.

Medical Attendance on Old Members of Friendly Societies.

Mr. WORTHINGTON-EVANS asked the Secretary to the Treasury to state how a man of the age of 65 and upwards, who had been a member for many years of a friendly society which had now become an approved society, could in future obtain medical attendance and treatment for which he had hitherto paid 1*d.* a week; and whether any part of the proposed grant of £1,650,000 would be applied in paying the increased cost of his medical attendance.—Mr. MASTERMAN replied: I am not aware of any reasons why the cost of medical attendance of the persons referred to by the honourable Member will, as he suggests, be increased by the operation of the Act or the proposed new arrangements.

The Insurance Act and Consultants' Fees.

Mr. HILLS asked the Secretary to the Treasury (1) what provision he proposed to make to secure adequate medical attendance and treatment, as provided by Section 15 (2) of the Insurance Act, for cases requiring more than could be afforded by a practitioner of ordinary competence; (2) whether his attention had been drawn to the fact that under the Regulations of the Insurance Commissioners, dated Oct. 1st, 1912, the cost of any consultation with a second doctor would fall upon the medical practitioners on the panel collectively, since the amount available for their collective remuneration would be diminished by the consultants' fees; and whether he really intended thus to discourage the recourse to a consultant in grave cases which, in order to secure the adequate treatment which the Act provided, require a consultant; and (3) whether the Regulations made by the Insurance Commissioners, dated Oct. 1st, 1912, contemplated provision only of such medical treatment as could be undertaken by a practitioner of ordinary competence; and whether this was a breach of Section 15 (2) of the Act, which contemplated treatment adequate to the disease, whatever its gravity.—Mr. MASTERMAN replied: The Regulations referred to have been drafted in compliance with the provisions of the Act, including the particular subsection to which the honourable Member refers, and fully carry out the intentions of Parliament. With respect to the question of remuneration, full regard has been had in calculating the amount available for the provision of medical benefit under the Act, to the various forms of treatment referred to in the honourable Member's questions in so far as they fall within the scope of medical benefit under the Act.

The Insurance Commissioners and Hospitals.

Mr. FELL asked the Secretary to the Treasury whether the Insurance Commissioners proposed to take over the Brompton Hospital for Consumption; and if this was part of the scheme to take over all the hospitals in the country for the purposes of the National Insurance Act.—Mr. MASTERMAN wrote in reply: The answer to both parts of the question is in the negative.

Fishermen and Medical Benefits.

Mr. FELL asked the Secretary to the Treasury whether any part of the additional £1,600,000 to be spent on the medical service under the National Insurance Act would be devoted to supplying better attendance, drugs, and appliances for the fishermen who were absent for such long periods from their homes and could not obtain the usual medical benefits under the Act.—Mr. MASTERMAN furnished the following written answer: The necessary modifications in the Regulations consequent upon the announcement of the Chancellor of the Exchequer are now being considered.

Sanatorium Patients in Munster.

Mr. GURNEY asked the Secretary to the Treasury to state the names of the sanatoria to which the 17 patients from Munster had been sent for treatment, how many of these patients were in the incipient stages of tuberculosis and how many were chronic cases, and had arrangements been made for the isolation of chronic tuberculous patients.—Mr. MASTERMAN answered: Fifteen of the cases were in an early stage. They were sent to the Newcastle Sanatorium, county Wicklow, the Heatherside Sanatorium, Donerailc, the County Clare Sanatorium, and to the Allan A. Ryan Home Hospital. Two were advanced cases, and of these one was sent to a general hospital, and the other temporarily to the County Clare Sanatorium. The answer to the last part of the question is in the affirmative.

Medical Benefits in the Highlands.

The Marquess of TULLIBARDINE asked the Secretary to the Treasury whether, before finally settling the conditions with the doctors in the Highlands of Scotland under which they would work the National Insurance Act, he would consider the advisability of first awaiting the

report of the Commission on Medical Services in the Highlands and Islands which was now sitting.—Mr. MASTERMAN answered: The reply is in the affirmative.

Professorial Appointments at Bombay Medical College.

Mr. REDDY asked the Under Secretary of State for India whether with regard to the two professorial appointments at the Medical College, Bombay, which were the subject of much controversy in the medical profession in India, he would inform the House whether one of these appointments was reserved for the military medical service and that the claims for equality of treatment by Indian medical men had been set aside; whether the emoluments and restrictions as regarded private practice were the same in each case; if not, why preferential treatment was reserved to one of the appointments; and whether he would lay the correspondence with reference to these appointments upon the table.—Mr. H. BAKER (on behalf of the Under Secretary) replied: It has not yet been decided whether the two posts in question should be created or, in the event of their creation, in what way or under what conditions they should be filled. There are no papers which could at present be conveniently laid upon the table.

TUESDAY, OCT. 29TH.

Small-pox Cases at Kirkcaldy.

In reply to Mr. WILKIE, Mr. MCKINNON WOOD (Secretary for Scotland) stated that 20 cases of small-pox had been notified at Kirkcaldy during the present year up to Oct. 23rd. Seven deaths had resulted until the morning of Oct. 24th. The ages and conditions as to vaccination of the fatal cases were as follows:—47 years, male, doubtful; 23 years, female, vaccinated; 7 days, infected before birth; 38 years, male, vaccinated; 47 years, male, unvaccinated; 46 years, male, doubtful; 33 years, female, vaccinated. The two female deaths were of women in childbirth.

Treatment of Tuberculosis in the Metropolis.

Mr. TOUCHE asked the President of the Local Government Board how many persons suffering from tuberculosis were being treated in the Poor-law infirmaries of the metropolis and in the hospitals of the Metropolitan Asylums Board, distinguishing those of 16 years of age and upwards from those under 16 years of age.—Mr. BURNS wrote in reply: According to a return which I obtained in November last, the number of cases of tuberculosis being treated in the Poor-law infirmaries, sick wards, and district sick asylums of the metropolis comprised 2352 persons of 16 years and upwards, and 163 under 16 years of age. The numbers in the children's institutions of the Metropolitan Asylums Board were 588, of which all but two were under 16.

Mr. TOUCHE asked the right honourable gentleman how many persons suffering from tuberculosis, and entitled under the National Insurance Act to sanatoria benefits, had been provided for by the London County Council, and how many cases were there waiting for accommodation.—Mr. BURNS furnished the following written answer: According to figures supplied to me on Saturday last, the London Insurance Committee have recommended 114 insured persons for sanatorium benefit, and this they are receiving. I am not aware that there are at present any insured cases waiting for accommodation. On Saturday last the committee had 47 vacant beds available in addition to the services of dispensaries.

WEDNESDAY, OCT. 30TH.

The Treatment of Consumptives.

Mr. FELL asked the Secretary to the Treasury (1) whether only one-fifth of the consumptives in this country would be entitled to sanatorium or any other benefits under the National Insurance Act, and (2) whether he could give any estimate of the amount of the charges which would fall on the local authorities in respect of the consumptives who would not be entitled to benefits under the National Insurance Act, but who would have to be placed in sanatoria by the local authorities under another Act.—Mr. MASTERMAN replied: Only insured persons or dependents of such persons can be treated at the expense of the National Insurance Fund. The number of these will bear a continually increasing proportion to the total number of consumptives, and it is probable that they will ultimately form a large majority of the consumptive persons in this country. The Insurance Act also contains provisions whereby sanatoria and other institutions for the treatment of tuberculosis may be made available for non-insured persons. I am unable, however, at present to give an estimate of the cost of the treatment of the consumptives who are not insured persons or dependents of insured persons.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication

BALLANCE, C. A., M.V.O., M.S. Lond., F.R.C.S. Eng., has been appointed Chief Surgeon of the Metropolitan Police.

BANKS, CYRIL, M.B., B.S. Lond., has been appointed Tuberculosis Officer and Assistant Medical Officer of Health to the Corporation of Birkenhead.

BANTING, C., M.D., B.S. Lond., F.R.C.S. Eng., has been appointed Assistant to the Ear and Throat Department at University College Hospital.

BUCK, HOWARD, F.R.C.S. Eng., has been reappointed Resident Surgical Officer at the Manchester Royal Infirmary.

BUSHNELL, FRANK GEORGE, M.D. Lond., D.P.H. Camb., has been appointed Tuberculosis Officer to the Essex County Council.

COOPER, G., M.B., B.Ch. Aberd., has been appointed House Surgeon at the Worcester Infirmary.

COWEN, T. P., M.D. Lond., has been appointed Medical Officer at Rainhill Asylum.

FRANKAU, CLAUDE H. G., M.B., B.S. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to St. George's Hospital.

GRAVES, T. C., M.B., B.S., B.Sc., M.R.C.S., L.R.C.P., has been appointed House Surgeon at University College Hospital.

HUGHES, E. E., F.R.C.S. Eng., has been appointed Surgical Registrar to the Manchester Royal Infirmary.

JOHNSON, J. W., M.B., B.Ch., has been appointed Obstetric Assistant at University College Hospital.

KHAN, M. M., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician at University College Hospital.

KING, G. B., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician at University College Hospital.

KINGSTON, STUART H., M.B., Ch.B. Bristol, L.R.C.P. Lond., M.R.C.S., has been reappointed Senior Resident Medical Officer at the Bristol Royal Infirmary.

LISCOMBE, R. H., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at University College Hospital.

LYON, D. MURRAY, M.B., Ch.B. Edin., M.R.C.P. Edin., has been appointed Assistant Pathologist to the Edinburgh Royal Infirmary.

NEWSHOLME, H. P., M.B., B.Ch., M.R.C.P., B.Sc., D.P.H., has been appointed Assistant Medical Officer of Health and Assistant School Medical Officer, Southend-on-Sea.

RUTHERFORD, SAMUEL, M.B., Ch.B. Glasg., has been appointed Assistant Medical Officer at the Barnes Convalescent Home, Cheadle.

SANDERS, W. B., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Medical Officer to University College Hospital.

SCOTT, JAMES M., M.B., Ch.B. Glasg., has been appointed Medical Officer at the Central Branch of the Manchester Royal Infirmary.

SMITH, HOWARD L., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Bow District by the Crediton (Devon) Board of Guardians.

SUTHERLAND, ROBERT, M.B., Ch.B. Vict., has been appointed Medical Officer and Public Vaccinator for the No. 2 District by the Chard (Somerset) Board of Guardians.

TASKER, L. S. B., M.B., B.S. Lond., has been appointed Casualty Surgical Officer to University College Hospital.

THORBURN, WILLIAM, M.D. Lond., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuit No. 5, to be attached more particularly to Oldham County Court.

TONKS, J. W., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician at University College Hospital.

WARBURTON, G. B., F.R.C.S. Eng., has been appointed Resident Medical Officer at the Barnes Convalescent Home, Cheadle.

WILSON, A., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer to University College Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BETHNAL GREEN INFIRMARY AND WORKHOUSE, Cambridge Heath, E.—Assistant Medical Officer. Salary at rate of £100 per annum, with apartments, board, and washing.

BIRKENHEAD BOROUGH HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with board and laundry.

BIRMINGHAM AND MIDLAND FREE HOSPITAL FOR SICK CHILDREN.—Resident Medical Officer and Resident Surgical Officer, both for four months. Salary £80 per annum each, with board, washing, and attendance.

BRADFORD CITY, INFANT CONSULTATIONS.—Medical Officer (female). Salary £250 per annum.

BRISTOL, COSSHAM MEMORIAL HOSPITAL, Kingswood.—House Surgeon. Salary £50 per annum, with board, lodging, and washing.

BRISTOL GENERAL HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board, residence, &c.

BURY ST. EDMUNDS, WEST SUFFOLK GENERAL HOSPITAL.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, lodging, and laundry.

CARDIFF, THE KING EDWARD VII. WELSH NATIONAL MEMORIAL.—Tuberculosis Physician. Salary £400 per annum.

CATERHAM ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and washing.

CHESTER, COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £170 per annum, with board, lodging, and washing.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon. Salary £80 per annum, with board, washing, and residence.

DERBY, DERBYSHIRE ROYAL INFIRMARY.—House Surgeon. Salary £100 per annum, with apartments, board, &c.

DEWSBURY UNION WORKHOUSE.—Assistant Medical Officer (female). Salary £100 per annum, with apartments, &c.

DUDLEY, GUEST HOSPITAL.—Senior Resident Medical Officer. Salary £120 per annum, with board, residence, attendance, and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Medical Officer for Electrical Department. Salary at rate of £75 per annum, with luncheon and tea.

FULHAM DISPENSARY FOR THE PREVENTION OF CONSUMPTION.—Senior Medical Officer. Salary £500 per annum. Also Assistant Medical Officer. Salary £250 per annum.

GUY'S HOSPITAL MEDICAL SCHOOL.—Lecturer on Chemistry. Salary £600 per annum.

HARTLEPOOLS HOSPITAL.—House Surgeon. Salary £100 per annum, with board, washing, and lodging.

HEREFORD, HEREFORDSHIRE COUNTY COUNCIL.—Assistant Medical Officer of Health. Salary £250 per annum.

LEAMINGTON SPA, WARNEFORD GENERAL HOSPITAL.—House Physician. Salary £85 per annum, with board, residence, and laundry.

LEEDS PUBLIC DISPENSARY.—Honorary Physician.

LEEK, STAFFORDSHIRE COUNTY ASYLUM, Cheddleton.—Assistant Medical Officer. Salary £160 per annum, with apartments, board, and washing.

LIVERPOOL CITY EDUCATION COMMITTEE.—School Medical Officer. Salary £250 per annum.

LIVERPOOL COUNTY ASYLUM, Rainhill.—Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, board, attendance, and washing.

LIVERPOOL, DAVID LEWIS NORTHERN HOSPITAL.—House Physician. Salary at rate of £80 per annum, with residence and maintenance.
LONDON, ADMINISTRATIVE COUNTY OF (LONDON COUNTY COUNCIL).—Psychologist. Salary at rate of £300 per annum.
LONDON HOSPITAL, E.—Assistant Obstetric Physician.
LOWESTOFT HOSPITAL.—House Surgeon, unmarried. Salary at rate of £100 per annum, with board, residence, and laundry.
MAIDSTONE, KENT COUNTY ASYLUM.—Fourth Assistant Medical Officer, unmarried. Salary £200 per annum, with quarters, attendance, washing, &c.
MAIDSTONE, WEST KENT GENERAL HOSPITAL.—Senior House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and laundry.
MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Assistant Medical Officer and Pathologist. Salary £60 per annum.
MIDDLESEX HOSPITAL, W.—Third Assistant to Director of Cancer Research Laboratories. Salary £150 per annum.
NEWCASTLE-ON-TYNE DISPENSARY.—Visiting Medical Assistant. Salary £160 per annum.
NORTHAMPTON ADMINISTRATIVE COUNTY.—Chief Tuberculosis Medical Officer. Salary £500 per annum.
NORTHAMPTON GENERAL HOSPITAL.—Physician. Also House Surgeon, unmarried. Salary £90 per annum, with apartments, board, washing, and attendance.
NORWICH, NORFOLK AND NORWICH HOSPITAL.—Casualty Officer, unmarried, for six months. Salary £60 per annum, with board, lodging, and washing.
NORWICH, JENNY LIND INFIRMARY FOR CHILDREN.—Resident Medical Officer (female) for six months. Salary £50 per annum, with board, apartments, and laundry.
NOTTINGHAM CITY ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £200 per annum, with board, apartments, and laundry.
NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £170 per annum, with apartments, attendance, light, and fuel.
OXFORD, RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—Honorary Medical Officer in Charge of Electro-therapeutic Department.
PRESTWICH UNION INFIRMARY, Charlestown-road, Blackley.—Second Assistant Medical Officer. Salary £120 per annum, with apartments, &c.
QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Resident Medical Officer. Salary £120 per annum, with board, residence, and laundry.
READING, ROYAL BERKSHIRE HOSPITAL.—Second House Surgeon for six months. Salary £30 per annum, with apartments, board, and washing.
ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Assistant Anæsthetist. Salary £50 per annum.
ST. MARY'S HOSPITAL, London, W.—Junior Casualty House Surgeon for six months. Salary £100 per annum, with board and lodging.
ST. THOMAS'S HOSPITAL.—Medical Registrar. Also Surgical Registrar.
SHEFFIELD, EAST-END BRANCH OF THE CHILDREN'S HOSPITAL (Out-Patient Department only).—House Surgeon. Salary £75 per annum, with board and lodging.
SHEFFIELD, JESSOP HOSPITAL FOR WOMEN.—Assistant House Surgeon, unmarried. Salary £60 per annum, with board, residence, and laundry.
SOUTHAMPTON PARISH INFIRMARY, Shirley Warren.—Resident Assistant Medical Officer. Salary £150 per annum, with apartments, rations, washing, and attendance.
STAFFORD, STAFFORDSHIRE COUNTY ASYLUM.—Assistant Medical Officer, unmarried. Salary £160 per annum, with apartments, board, and washing.
TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.
WARWICK COUNTY ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £175 per annum, with board, apartments, and laundry.
WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon for six months. Salary £80 per annum, with board, rooms, and laundry.
WORCESTER COUNTY AND CITY ASYLUM, Powick.—Junior Assistant Medical Officer, unmarried. Salary £160 per annum, with board, apartments, washing, and attendance.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy as a Certifying Factory Surgeon at March, in the county of Cambridge.

Births, Marriages, and Deaths.

BIRTHS.

DINGLE.—On Oct. 24th, at Sandakan, British North Borneo, the wife of Percival A. Dingle, M.R.C.S. Eng., L.R.C.P. Lond., of a son.
TAYLOR.—On Oct. 23rd, at Tun Bridge, Liphook, Hants, the wife of J. J. Taylor, M.A., M.D. Cantab., of a son.

DEATHS.

CORBYN.—On Oct. 24th, at Lypiatt Lawn, Cheltenham, Joseph Christian Corbyn, Deputy Surgeon-General, late of the Bengal Medical Service, in his 83rd year.
HAYES.—On Oct. 24th, at Audrey, Bognor, Thomas E. D. Hayes, M.D., in his 74th year.
HOLLAND.—On Oct. 26th, at Fairview, Amberley, Glos., Edward Wilmot Holland, B.A. Cantab., M.R.C.S., L.R.C.P. Lond., F.Z.S.
POPE.—On Oct. 25th, at Prebend-street, Leicester, Frank Montague Pope M.D., F.R.C.P., in his 57th year.
WOOD.—On Oct. 22nd, at Grosvenor-street, Chorlton-on-Medlock, Manchester, John William Atkinson Wood, M.R.C.S., L.R.C.P.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

HEALTH OF MALTA.

IN his report on the Malta Blue Book for the year 1911–12 the Chief Secretary to the Government (Lieutenant-Colonel the Hon. E. P. S. Roupell, D.S.O.) states that the civil population on April 1st, 1912, was estimated at 215,332. The birth-rate for the year was 33·49 per 1000, as compared with 36·12 per 1000 in 1910–11, and an average for the last 12 years of 37·97 per 1000. The death-rate of the civil population was 24·42 per 1000, as against 21·42 in 1910–11. The general state of health of the island during the year was satisfactory, except for an extensive epidemic of measles and some cases of cholera. Of the 7 small-pox cases (2 fatal) 2 were landed from ships. The usual preventive measures were successful in checking the spread of the infection. There was an increase in the number of enteric fever cases (248, with 59 deaths), which were scattered over a considerable part of the island. The distribution of the cases in time and locality excludes all suspicions of contamination of the public water-supply. There was a considerable epidemic of measles—2891 cases, 144 deaths. Cholera infection was conveyed with the immigration of some 2000 refugees from Tripoli and Cyrenaica. The outbreak was of a very short duration and very limited in extent; the cases numbered 116 and the deaths 85. The preventive measures taken were successful in stamping out the disease. Mediterranean fever still shows a decrease among the civil population, and has practically ceased altogether in the fleet and garrison. During the year 15,341 goats and sheep were inspected by the sanitary authorities; 386 were found infected and destroyed. The number of vaccinations performed by district medical officers in Malta and Gozo was 4923, of which 4762 were successful. The death-rate amongst children under 12 months was 276·21 per 1000 births, as against 236·93 in the previous year, the increase being mainly due to the epidemic of measles. There was also a slight increase in the death-rate of children under five years. The mean temperature for the year was 63·2°. For the summer months (June, July, August, and September) it was 75·9°, and for the winter months (January, February, and March) 56·3°. The total rainfall was 24·230 inches. Earthquakes were felt locally on Sept. 30th, Oct. 16th, and Nov. 15th, 1911; that on Sept. 30th did some damage in Gozo to the façade of a church and to the barracks at Fort Chambray. The total number of persons admitted into the hospitals and maintained in the charitable institutions of Malta and Gozo (exclusive of staff) was 7422, as compared with 8182 in 1910–11. In addition to these, 130,699 persons were attended by the district medical officers at the Government dispensaries or at their own homes, as against 119,893 in 1910–11. The deaths numbered 203 in the General Hospital, 1 in the Seamen's Hospital, 43 in the Santo Spirito Hospital, 61 in the Connaught Hospital, 48 in Mancel Hospital, and 58 in Gozo Hospital.

A PRACTICE IN 1836.

THE question of medical remuneration in country districts in the earlier part of last century has not been much discussed, though we read frequent accounts of the kind of practice peculiar to the days of the Bob Sawyers and their like. It may afford a measure of grim consolation to some harassed readers of THE LANCET to learn that, in November, 1836, a surgeon residing at Tirril, near Penrith, was fain to take care of an immense district for £30 per annum! The practice assigned to him, according to the *Morning Herald* of Nov. 21st, 1836, comprised a number of villages and hamlets, chiefly to the North and West of Ullswater. These were Askham (four miles from his place of residence), Barton (a large district), Brougham (five miles), Chilburn (seven miles), Lower Winder (three miles), Patterdale, that lonely corner of the world (nine miles), Martindale (seven miles), Crowther (four miles), Stockbridge, Yarmouth, and Eamont Bridge (three miles), and the attendance of the union workhouse at Eamont. In addition to professional attendance on this vast and scattered round—for the several villages lie north, east, south, and west of Tirril—the unnamed surgeon was expected to supply all medicines free of charge. Moreover, he had doubtless to keep a horse, or horses, just as his successors in the Patterdale district to-day keep motor-cycles, and often he must have been compelled to climb the boggy and trackless fells on the lakeside of Ullswater. "It has usually been said," comments the *Cumberland Pacquet*, quoted by the *Herald*, "that eleven pence out of the shilling is the doctors' profit: we should be sorry to give a penny out of the shilling for his profits out of this magnificent salary if he but half perform the duty he has undertaken." The quotation shows that in the days of William IV., £30 was considered a mean remuneration by the journalists. Yet the sum was offered and accepted, which goes to prove that, in a remote and sparsely populated countryside, some medical men were fain to work at labourers' wages, and that only a year before Queen Victoria came to the throne.

A PALMIST SEVERELY PUNISHED.

THE palmist in the Edgware-road who was recently sentenced at Bow-street to pay a fine of £20 with £5 5s. costs, or in the alternative to be imprisoned for six weeks, no doubt owes some part of the severity of her sentence to the cruel and dangerous nature of one of the prophecies proved against her. She said, among other things, to a woman employed by the police to consult her, whom she believed (rightly in fact) to be a married woman, "You had a love affair in your 'teens and another in your twenties. You should have married the one in your 'teens, as your natures are more alike. Your husband is distant and cold." She then proceeded to consign him to an early grave, saying: "Sometimes the robust ones go off very suddenly. I can't see him with you all through." Presumably some of the persons who consult sooth-sayers of this type believe what they are told, and a nervous and credulous woman with affection for her husband might be reduced almost to despair by such a suggestion. The husband, too, would be likely to hear of the prediction of his early demise, which in the case of a nervous and possibly delicate man might have a serious effect upon his health. The police are to be congratulated upon their recently active, if somewhat belated, efforts to diminish the practice of this pernicious form of humbug.

JOHN OF GADDESDEN.

To the Editor of THE LANCET.

SIR,—With reference to Dr. H. P. Cholmeley's work on this distinguished gentleman and your own leading article on the same subject (THE LANCET, Sept. 21st, p. 836), we should, I think, be cautious in attributing John of Gaddesden's recommendation of urine in dropsy to any very penetrating clinical insight on his part. His reason for administering drugs seems to have been much the same as that of our Puritan ancestors for prohibiting games. They argued that since some wrong things are pleasant, everything pleasant is wrong; and John of Gaddesden seems to go on the principle that since some beneficial drugs are nasty, therefore everything nasty is a beneficial drug. It is difficult to account otherwise for some of his prescriptions. Opening the "Rosa" at random, I find that for the treatment of deafness he prescribes the urine of a bull, or an elderly goat, and further, centaury, rue, thus, ants' eggs, earthworms, and snake's blood, steeped in urine. This to be dropped into the ears, and, he says, there is no remedy like it. In this he is too modest. There are, in the "Rosa," plenty of remedies equally nasty, such as asses' dung, the parings of asses' hoofs, goats' dung, and so forth.

John had a good conceit of himself. He loves to describe the mistakes made by other physicians, and the immediate cure of the patient when he appeared on the scene, made the correct diagnosis, and applied the right treatment. At the end of his treatment of tinnitus he says: "Here I have given many and various remedies for this disease, because deafness and tinnitus are so common and frequent, and if the doctor disperses them (*profligaverit*) he will achieve much credit and receive no small reward in cash, as I myself have very often found."

I am, Sir, yours faithfully,

Parkstone. CHAS. MERCIER.

WANTED—EVENING WORK.

A SURGEON to one of the great London hospitals has brought to our notice the following case, which he guarantees as a genuine one. A student in his last year is in great financial difficulties, and our informant has advised him to try to earn a little by dispensing or doing other evening work for a medical man. If any of our readers to whom such assistance would be useful will write to us, we will put them in communication with the applicant.

"CANADIAN NEWS."

WE have received the first number of a new illustrated weekly called *Canadian News*, which is published in London (England), Montreal, and Toronto at the price of 1d. There is nothing of a professional nature in this first issue to which to call attention, but we may repeat the words used by Sir H. Rider Haggard in an appreciatory letter in sincerely hoping that the journal "may be instrumental in its object of establishing still more firmly the bonds of affection between Canada and the Mother Country."

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced:—

Oct. 29th–Nov. 2nd (London, Royal Horticultural Hall).—Twenty-third Universal Cookery and Food Exhibition.
Nov. 8th–16th (London, Olympia).—Motor Exhibition.

In 1913:—

(Easter week) (Berlin).—Fourth International Congress for Physiotherapy.
April 26th (Ghent) (opens).—International Exhibition.
Aug. 6th–12th.—(London).—Seventeenth International Congress of Medicine.
Sept. 2nd–6th (Groningen).—International Physiological Congress.
" 22nd–28th (Milan).—Fourteenth International Anti-alcoholic Congress
September (Birmingham).—British Association.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY.—Mr. L. V. King: Radiation and Absorption of Light in Gaseous Media, with Applications to the Intensity of Sky Radiation (communicated by Sir J. Larmor, secretary to the Royal Society).—Dr. P. E. Shaw: A Standard Measuring Machine (communicated by Prof. J. H. Poynting).—Mr. E. M. Stubbs and Dr. E. B. R. Prideaux: A Spectro-photometric Comparison of the Emissivity of Solid and Liquid Gold at High Temperatures with that of a Full Radiator (communicated by Prof. F. G. Donnan).—Mr. C. Smith: Optical Properties of Substances at the Critical Point (communicated by Prof. J. T. Hewitt).—Hon. R. J. Strutt: Absorption of Helium and Other Gases under the Electric Discharge.—Mr. F. W. Aston: (1) On the Discharge between Concentric Cylinders in Gases at Low Pressures (communicated by Sir J. J. Thomson, O.M.); (2) On the Influence of the Nature of the Cathode on the Length of the Crook's Dark Space (communicated by Sir J. J. Thomson, O.M.).—Mr. A. Campbell: On the Determination of the Absolute Unit of Resistance by Alternating Current Methods (communicated by Dr. R. T. Glazebrook).—Mr. A. Mallock: Some Unclassified Mechanical Properties of Solids and Liquids.—Sir W. de W. Abney, K.C.B.: Trichromatic Theory of Colour Vision. The Measurement of Fatigue of the Retina.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

TUESDAY.

SECTION OF PATHOLOGY (Hon. Secretaries—H. R. Dean, Gordon W. Goodhart): at 8.30 P.M.

Laboratory Meeting at the Lister Institute, Chelsea, S.W.

Dr. G. H. K. Macalister: Demonstration of Certain Methods of Staining Tubercle Bacilli.
Miss Chick: Demonstration of Electrical Properties of Globulin Suspensions by Microscopical Methods.
Dr. J. A. Arkwright: Acid Agglutination of Bacteria.
Dr. W. J. Penfold: (1) The Effect of Size of Population on Rate of Selection of New Bacterial Races; (2) Bacterial Selections by Bodies Related to Chloracetic Acid.
Miss Norris and Dr. Penfold: Effect of Concentration of Food Supply on the Generation Time of Bacteria.
Dr. E. C. Hort and Dr. Penfold: Effect of Animal Passage in rendering Bacteria Pyrogenetic.
Dr. E. H. Ross and Dr. J. W. Cropper: Demonstration of Certain "Parasites" in Guinea Pigs and in Syphilitic Tissues.
Dr. H. C. Ross and Dr. Cropper: Enumeration Methods in Demonstrating the Action of Auxetics on Leucocytes.
Mr. Cooper and Dr. Maclean: Cure of Beri-beri in Fowls by Various Products (demonstration).

WEDNESDAY.

SECTION OF OPHTHALMOLOGY (Hon. Secretaries—J. Herbert Parsons, Leslie Paton): at 8 P.M.

Cases and Specimens:

Mr. J. Herbert Fisher: Drawing of Case of Sub-hyaloid Hæmorrhage.
Mr. N. Bishop Harman: Defect of Both External Recti Muscles with Absence of Radius in each Forearm and Deformity of Hands.

Papers (at 8.30 P.M.):

Mr. E. Nettleship: Choroidal Sarcoma of Unusually Slow Progress.
Mr. E. Nettleship and Dr. A. Hugh Thompson: Pedigree of Leber's Disease.
Mr. A. W. Ormond: Case of Retino-choroiditis Juxta-papillaris.
Dr. G. Coats: Blockage of Central Artery of the Retina.

THURSDAY.

SECTION OF OBSTETRICS AND GYNÆCOLOGY (Hon. Secretaries—W. W. H. Tate, T. W. Eden): at 8 P.M.

Short Communications:

Dr. Drummond Maxwell: Case of Eclampsia treated by Cæsarean Section.
Dr. Russell Andrews: (1) Case of Simultaneous Intra-uterine and Extra-uterine Pregnancy in which Internal Wandering of the Ovum seems to have Occurred; (2) Small Ovarian "Dermoid" containing, among Other Structures, Brain and Well-formed Intestine.
Dr. C. Hubert Roberts: Urgent Cæsarean Section in a Case of Contracted Pelvis with Prolapse of the Cord. Recovery of Mother and Child.

Paper:

Dr. J. M. Wyatt: Le Fort's Operation for Prolapse—Report of Eight Cases.

FRIDAY.

CLINICAL SECTION (Hon. Secretaries—Charles H. Fagge, W. Essex Wynter): at 8.30 P.M.

Cases:

Mr. Donald Armour: (1) Innominate Aneurysm after Distal Ligature; (2) Chronic Circumscribed Inflammation of the Copora Cavernosa.
Dr. M. A. Cassidy: Rheumatoid arthritis treated by Hennig's Splint.
Dr. J. Galloway: Case of Tuberculous Peritonitis.
And other Cases.

MEDICO-LEGAL SOCIETY AND LIFE ASSURANCE MEDICAL OFFICERS' ASSOCIATION, 11, Chandos-street, Cavendish-square, W.

WEDNESDAY.—5.30 P.M., Joint Meeting to Discuss Medico-legal Problems arising out of the National Insurance Act.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Clinical Cases.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.

TUESDAY.—5 P.M., Dr. D. B. Lees: The Diagnosis and Treatment of Incipient Pulmonary Tuberculosis. (Bradshaw Lecture.)

THURSDAY.—5 P.M., Dr. R. H. P. Crawfurd: Echoes of Pestilence in Literature and Art—Lecture I., To the Great Antonine Plague. (FitzPatrick Lecture.)

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

MONDAY.—5 P.M., Mr. S. G. Shattock: Specimens illustrating Diseases of Some of the Ductless Glands. (Museum Demonstration.)

WEDNESDAY.—5.30 P.M., Mr. J. F. Colyer: Specimens illustrating Periodontal Disease (Pyorrhœa Alveolaris) as seen in Man, Wild Animals in Captivity and Domesticated Animals. (Museum Demonstration.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. S. E. Dore: Clinique (Skin). 5.15 P.M. Lecture:—Dr. W. D'O. Grange: Treatment of Brachial and Sciatic Neuritis.

TUESDAY.—4 P.M., Dr. J. Taylor: Clinique (Medical). 5.15 P.M., Lecture:—Dr. R. Maguire: The Germicidal Treatment of Pulmonary Tuberculosis.

WEDNESDAY.—4 P.M., Mr. C. Ryall: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. D. Forsyth: Peculiarities of Speech as Evidence of Nervous Disease.

THURSDAY.—4 P.M., Dr. L. Guthrie: Clinique (Medical). 5.15 P.M., Lecture:—Dr. E. C. Hort: The Causes and Treatment of Fevers.

FRIDAY.—4 P.M., Mr. W. Stuart-Low: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 11 A.M., Mr. Addison: Demonstration of Minor Operations 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. Low: Insects as Carriers of Disease in Tropical Medicine.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Mr. T. Gray: Demonstration of Fractures, &c. 11.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin 5 P.M., Lecture:—Dr. Saunders: Clinical, with cases.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations on the Throat, Nose, and Ear. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women. 5 P.M., Lecture: Dr. Beddard: Practical Medicine.

THURSDAY.—10 A.M., Dr. Simson: Gynæcological Demonstration. 12.15 P.M., Lecture:—Dr. G. Stewart: Neurological Cases. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Addison: Appendicitis in Children.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Lecture:—Dr. Owen: Practical Medicine. 12.15 P.M., Lecture:—Dr. Bernstein: Clinical Pathology. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. R. H. Cole: Children and Insanity.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—Out-patient Demonstrations:—10 A.M. Dr. G. Holmes: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.—2.15 P.M., Mr. W. Turner: Surgery 3 P.M., Mr. W. Turner: Operations. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.15 P.M., Mr. R. Lake: Ear and Throat.

TUESDAY.—Out-patient Demonstrations:—10 A.M., Dr. C. Singer: Medical. Mr. A. J. Walton: Surgical. 12 noon, Dr. H. MacCormac: Skin.—2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Mr. R. Carling: Surgery. 3.15 P.M., Dr. G. Rankin: Medicine. 4.15 P.M., Sir M. Morris: Skin Clinique (alternate Tuesdays).

WEDNESDAY.—Out-patient Demonstrations: 10 A.M., Dr. F. Langmead: Medical. Mr. P. Cole: Surgical. 11 A.M., Mr. R. E. Bickerton: Eye.—2 P.M., Mr. L. V. Cargill or Mr. Choyce: Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.15 P.M., Mr. Cargill: Eye Clinique. 4.30 P.M., Mr. C. C. Choyce: Surgery.

THURSDAY.—Out-patient Demonstrations:—10 A.M., Dr. G. Holmes: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.—2 P.M., Mr. R. Carling or Mr. W. Turner: Operations. Dr. A. Davies: Pathological Demonstration. 3.15 P.M., Dr. R. Wells: Medicine. 4.30 P.M., Special Lecture:—Sir William Turner: Some Large Abdominal Tumours.

FRIDAY.—Out-patient Demonstrations:—10 A.M., Dr. C. Singer: Medical. Mr. A. J. Walton: Surgical. 12 noon, Dr. H. MacCormac: Skin.—2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Sir John Rose Bradford; Medicine 3.15 P.M., Mr. L. McGavin: Surgery. 2.15 P.M., Special Lecture:—Sir John Rose Bradford: Hodgkin's Disease.

SATURDAY.—Out-patient Demonstrations: 10 A.M., Dr. F. Langmead: Medical. Mr. P. Cole: Surgical. 11 A.M., Mr. R. E. Bickerton: Eye.—10 A.M., Dr. W. Steuart: Radiography.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.

MONDAY.—1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Out-patient Department—Room III., Dr. M. Leslie; Room IV., Dr. S. Thompson. 4 P.M., Wards, Dr. M. Leslie. 4.30 P.M. to 5.30 P.M., Lecture Hall, Lecture-Demonstration.

TUESDAY.—1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Out-patient Department—Room III., Dr. Phear; Room IV., Dr. B. King. 2 P.M., Operations and Throat Clinic, Mr. A. Evans. 3 P.M., Wards, Dr. White. 3.30 P.M., Wards, Dr. Phear. 4.30 P.M., to 5.30 P.M., Lecture Hall, Lecture-Demonstration.

WEDNESDAY.—2 P.M., Wards, Dr. A. Davies. Out-patient Department—Room III., Dr. Drysdale; Room IV., Dr. Kellie. 4 P.M., Wards, Dr. Drysdale. 4.30 P.M., Roentgen Ray Department, Dr. Jordan. 7 P.M., Department for the Prevention of Consumption.

THURSDAY.—9.30 A.M., Dental Department, Mr. G. Thomson. 1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Out-patient Department—Room III., Dr. M. Leslie; Room IV., Dr. S. Thompson. 4.30 P.M. to 5.30 P.M., Lecture Hall, Lecture-Demonstration.

FRIDAY.—1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Wards, Dr. Calvert. Out-patient Department—Room III., Dr. Phear; Room IV., Dr. B. King. 3.30 P.M., A Special Clinical Demonstration by one of the Out-patient Physicians.

SATURDAY.—10 A.M., Out-patient Department—Room III., Dr. Drysdale; Room IV., Dr. Kellie. 11.30 A.M., Roentgen Ray Department, Dr. Jordan.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. E. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. D. Gillies). 3 P.M., Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

TUESDAY.—Clinic; 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting). 4.30 P.M., Lecture:—Dr. A. E. Giles: Tuberculosis of the Pelvic Organs.

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Mr. W. Steuart); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan). 5.30 P.M., Eye Operations (Mr. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie); Clinical Pathology and Pathological Demonstration (Dr. W. A. Duncan). 4.30 P.M., Lecture:—Mr. R. P. Brooks: Ocular Headaches.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY.—4 P.M., Dr. Thompson: Infantile Convulsions.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. F. Buzzard: Clinical Cases.—5 P.M. Dr. S. A. K. Wilson: Neuropathology. (Special Course.)

WEDNESDAY.—5 P.M., Dr. J. Collier: The Clinical Examination of Cases of Disease of the Nervous System. (Special Course.)

THURSDAY.—5 P.M., Dr. C. M. H. Howell: Anatomy and Physiology of the Nervous System. (Special Course.)

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. F. Buzzard: Clinical Cases.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

Special Post-Graduate Course in the Diagnosis and Treatment of Pulmonary Tuberculosis, including the Use of Tuberculin:—

MONDAY.—4.30 P.M., Dr. Acland: The Problem of Consumption.

TUESDAY.—4.30 P.M., Sir R. Douglas Powell, Bart., K.C.V.O.: The Rôle of the Cardio-vascular System in Pulmonary Tuberculosis.

WEDNESDAY.—4.30 P.M., Sir James K. Fowler, K.C.V.O.; The Symptomatology of Pulmonary Tuberculosis.

THURSDAY.—4.30 P.M., Sir William Osler, Bart.: Acute Tuberculous Pneumonia.

FRIDAY.—4.30 P.M., Sir T. Clifford Allbutt, K.C.B.: Pleurisy in Relation to Pulmonary Tuberculosis.

LISTER INSTITUTE OF PREVENTIVE MEDICINE, Chelsea Gardens, Chelsea Bridge-road, S.W.

FRIDAY.—4 P.M., Lecture:—Mr. Greenwood: Some Methods of Epidemiological Research.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

TUESDAY.—2 P.M., Dr. W. Griffith: The Pathology of the Skin. 6 P.M., Dr. W. K. Sibley: Treatment of Skin Diseases by Hyperæmia.

THURSDAY.—6 P.M., Dr. M. Dockrell: Syphilis: History and Primary Invasion (Constitutional and Local); Eruptions, Erythematous (I., Macular; and II., Macula-Papular).

QUEEN'S HOSPITAL FOR CHILDREN, Board Room of the Hospital, Hackney-road, N.E.

MONDAY.—4 P.M., Dr. J. P. Parkinson: Demonstration of Cases.

FRIDAY.—4 P.M., Dr. A. W. G. Woodforde: Vaccine Therapy in Relation to Diseases of Children.

ROYAL DENTAL HOSPITAL OF LONDON SCHOOL OF DENTAL SURGERY.

TUESDAY.—6 P.M., Mr. H. Austen: The Maintenance of a Healthy Mouth in a Clean State.

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Mr. W. R. Douglas: Common Lesions of the Colon, Diagnosis and Treatment (Post-Graduate Clinic.)

MANCHESTER ROYAL INFIRMARY.

TUESDAY.—4.30 P.M., Dr. E. M. Brockbank: The Uses of the Clinical Polygraph. (Post-Graduate Clinic.)

FRIDAY.—4.30 P.M., Mr. J. H. Ray: Tumours of the Breast. (Post-Graduate Clinic.)

SALFORD ROYAL HOSPITAL.

TUESDAY.—Dr. J. B. Macalpine:—Tuberculosis of the Kidney. (Post-Graduate Demonstration.)

For further particulars of the above Lectures, &c., see Advertisement Pages.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

TUESDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (6th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (7th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M. Aural and Ophthalmic), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (8th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.) Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (9th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.) Hospitals operations are performed daily. At the Western Ophthalmic Hospital operations are performed on Monday, Tuesday, Thursday, and Friday at 3 P.M., and on Wednesday and Saturday at 11 A.M.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Oct. 30th, 1912.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Oct. 24	29·35	S.W.	0·05	68	52	41	45	46	Overcast
,, 25	29·52	S.W.	...	71	52	39	39	39	Foggy
,, 26	29·72	S.E.	...	52	52	39	40	40	Foggy
,, 27	29·78	S.W.	0·34	87	60	40	53	56	Cloudy
,, 28	29·49	S.	0·15	69	60	54	56	57	Raining
,, 29	29·45	W.	0·26	91	60	54	55	56	Cloudy
,, 30	29·38	S.W.	0·10	81	56	51	50	51	Overcas

The following journals, magazines, &c., have been received.—School Hygiene, Archivos Brasileiros de Medicina, Archives of Internal Medicine, Archiv für Experimentelle Pathologie und Pharmakologie, Birmingham Medical Review, Malaya Medica Journal, American Journal of Obstetrics, Therapeutic Gazette Surgery, Gynecology and Obstetrics, Revue d'Hygiène, Journal of Hygiene, Local Government Review, Medical Review of Reviews, Indian Medical Gazette, Indian Medical Record All-India Sub-Assistant Surgeons' Association Year Book, Indian Medical Journal, Annales de Gynécologie et d'Obstétrique, Archives de Médecine e Pharmacie Navales, Bulletin of the Johns Hopkins Hospita Transvaal Medical Journal.

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